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New Methods for the Selection of Public Health Personnel

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AND

LILLIAN D. LONG, PH.D.*

THE Merit System Unit of the American Public Health Association traces its origin to the passage of the 1939 Amendment to the Federal Social Security Act. This Amendment gave to the U.S. Children's Bureau power to require states to provide for the "establishment and maintenance of personnel standards on a merit basis" in connection with those programs of a public health nature for which the Children's Bureau administers the Federal funds made available by the Act. A similar requirement was written into the regulations of the U.S. Public Health Service.† In order to assist the states in the establishment of such merit systems, the Children's Bureau and the Public Health Service set up certain criteria for the evaluation of procedures proposed by the states. The objectives which these criteria express are essentially the same objectives which have long been maintained under the civil service. The distinction between the civil service and the merit system, however, resides chiefly in the fact that authorization for civil service is based upon law, whereas authorization for the development of the merit system is based upon regulation.

One of the criteria relating to the selection of personnel was that personnel

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†For a discussion of the development of the merit system program in the field of public health, following the passage of the 1939 Amendment, the reader is referred to an article by L. E. Burney and F. M. Hemphill, *Merit System in Public Health*, Am. J. Public Health, 1944, 34: 1173.

EXT.

in a merit system must be selected competitively on the basis of an examining process which, in the case of professional personnel, should include either a written examination or a so-called unassembled examination. Recognizing as they did the importance of using only examination material of high calibre for this purpose, and aware also of the difficulties involved in the preparation of such material, the Children's Bureau and the Public Health Service turned to the American Public Health Association as a professional organization of public health workers to enlist its assistance.

Since 1941, then, the American Public Health Association has been developing examination material to be used by the states in the selection of public health personnel. The states are in no sense under any compulsion to use these examinations, but as they have grown increasingly aware of the quality of the material offered by the Merit System Unit, and of the knotty problems involved in attempts to prepare such material locally, they are making increasing use of what the Merit System Unit has to offer. So far, the subject-matter areas in which examinations have been developed are Administrative Public Health, Public Health Nursing, Laboratory work, and Environmental Sanitation. The first examination in Public Health Nursing was prepared by the Unit in July, 1942, for the State of Arizona. Since that time the Merit System Unit has prepared 80 nursing examinations, ranging from those for clinic nurses to state directors; 19 laboratory examinations, ranging from a laboratory technician position to the assistant director of a laboratory; three examinations in Sanitary Engineering; and two examinations for Administrative Health Officers—a total of 104 examinations in 19 states. Over 9000 questions have been developed in the four fields mentioned and these are being continually supplemented and revised.

An unusually rigorous procedure has been adhered to throughout in the preparation of the examination questions and the examinations themselves. For various reasons it was decided to develop objective material, and the multiple-choice type of question with a premise which states the problem and five choices, one and only one of which is correct, has been used almost exclusively. This form of question has turned out to be eminently satisfactory. Not only has it a wide range of applicability in terms of subject matter, but it is also demonstrating its usefulness at a judgment level as well as at a factual level.

Every stage of the process has been a cooperative undertaking among specialists in the subject-matter field and specialists in the field of test construction. A particularly satisfactory phase of the program has been the decision to use persons actively engaged in public health work as item constructors. The thought behind this step was that in so doing the academic, textbookish flavor which so frequently characterizes examination material would be avoided and that the questions would reflect the realistic and practical viewpoint of the constructors. The constructors are urged to draw from their own experiences in developing items, but at the same time it is expected that the answer will be backed up by some authoritative reference. This, of course, is always of essential importance in any public examination, since every

candidate has the right to challenge the answer given as correct by the examiners, even to the extent of taking it into court, if he has grounds for disagreeing with it.

Constructors are trained in the art of item-writing at a series of meetings and are subsequently remunerated for each item they produce. Straight-forward, factual items receive lower valuations, whereas items which require the exercise of judgment for their solution are more difficult to construct and therefore deserve a higher reward. As they come into the office of the Unit, items are given accession numbers and the choices are randomized. They are then reviewed in a preliminary way by the subject-matter consultant in the appropriate field and by the test consultant before being sent out to the panel of reviewers. These reviewers are all authoritative people in their fields whose judgment with regard to the validity of problems in the area under consideration would be generally accepted. The reviewers, who number from three to six, review the items in groups of 50 or more. The mechanics of this process involve actually going through a group of items and selecting the answer which is considered to be correct. When a reviewer disagrees with a constructor as to the correct choice, he presents the arguments for his point of view, and whenever he disapproves of the item on any other ground he notes the reasons for such disapproval. These responses and criticisms are then pooled by the subject-matter and test consultants and whenever necessary the items are revised to satisfy the objections which have been raised. Although the item is at this point carded, filed, and considered to be ready for inclusion in an examination, at no stage is it proof against further revision, as such revision seems to be indicated.

The framework around which the examination is built is the job specification prepared by the state. These specifications stipulate the areas and the degree of knowledge which candidates will be expected to possess at entrance to the position, and it is for these so-called "knowledges" which the examinations test. The subject-matter consultant, in conjunction with the test consultant, draws up an outline of the examination on the basis of the analysis of the job specifications to indicate the number and difficulty level of the items which are to be given in each area of knowledge. The most exacting part of the whole process—the actual "pulling" of the items from the files—is then begun. At no stage in the development of examination materials is there a greater need for the exercise of sound judgment in order that the final product may be an articulated and effective diagnostic instrument. The basic task which the examination is expected to perform is to rank the candidates in such an order that those who perform best on the examination will be those who will perform best on the job. To this end, the items selected for inclusion must each of them contribute in some measure to distinguishing between the better-qualified and less well-qualified candidates.

In addition to this major criterion, certain other standards of test construction must be met: for example, certain arrangements of the items with regard to difficulty level within the examination have been found to be more satisfactory than certain others; no items can be included which contain infor-

mation which gives away the answer to another item; items which test for the possession of the same specific piece of information are uneconomical and should be avoided; items relating to the same subject-matter area should in general come together in the examination and follow a logical arrangement.

The states receive from the Merit System Unit three copies of the examination, including instructions to the candidate, the answer booklet and the answer key—all ready for duplication by the state. In order to assure the complete suitability of the examination, it is customarily recommended that local consultants review the examination in its final form in order to detect any material which may be unsuitable in the light of local conditions. If any such material has been included, substitute items are provided. The American Public Health Association makes this material available to the states only with the understanding that the state is not to release it or publish it in any form without the approval of the Association. This stipulation is necessary in order to safeguard the confidential nature of the examination material. The cost of an examination is related to the level of position for which it is prepared and is computed on a non-profit basis.

The final step in this process of developing diagnostic instruments for the selection of public health personnel is, in a sense, the most essential—namely, the evaluation of the effectiveness with which the preceding steps have been taken. Such an evaluation cannot, of course, be undertaken until the states return to the Merit System Unit office the results of the examinations as they are given. An increased realization on the part of the states of the benefits which they will themselves derive from such a procedure is reflected in their increased willingness to make this material available to the Unit. Evaluation may proceed thereafter in a number of directions. The basic direction is the determination of the so-called internal consistency of the examination, or the degree to which the responses to the individual items agree in selecting the better as opposed to the poorer candidates. In order to determine whether this is the case, statistical analyses are undertaken to discover for each individual item whether the candidates who answered it correctly scored high on the whole examination, and whether the candidates who answered it incorrectly scored low on the entire examination. If the opposite situation should happen to obtain, that particular item would be considered as pulling against the discriminating work being done by the rest of the test and would, therefore, be considered unsatisfactory for use with this particular group of candidates. The difficulty level of the questions is also determined. Items which are either passed or failed by the entire group are useless as discriminators and probably should not be included again in examinations at this level. The reliability of the test, that is, the consistency with which it would rank the competitors in the same order if it were given more than once, is also determined.

These indices, as they are obtained, contribute to the evaluation of individual items and the examinations as a whole, and the interpretation of them makes it possible constantly to improve the effectiveness of subsequent examinations. The results which have been so far analyzed lead to four definite conclusions: in the first place, examinations have had a very high degree of

reliability so that it is possible to say with confidence that the order in which candidates are ranked on the examination would remain substantially the same if the examination were repeated; in the second place, the number of errors in the subject-matter content has been negligible, largely as a result of the exhaustive reviewing process to which each item is subjected before it is used; in the third place, the analyses have demonstrated that *a priori* judgments with regard to the difficulty level of items must be checked against empirical evidence; in the fourth place, the individual items have been shown to possess a gratifying degree of discriminating power.

The most satisfactory way of validating a test, that is, of determining whether an examination is really selecting the best laboratory workers or the best public health nurses, would be to correlate the results of the examination with the subsequent performance of appointed candidates. A prerequisite for obtaining such a measure, however, is the development of satisfactory methods of rating job performance, a process which at the present time is itself frequently unreliable and invalid. It is this kind of criterion, nevertheless, which the Merit System Unit hopes ultimately to be able to obtain.

Future activities of the Merit System Unit will probably be directed towards the realization of two major objectives: the first of these will be the development of examination material in the fields of public health work which have so far not been touched; the second will be a continuation of efforts to measure the validity and reliability of examinations which are being prepared and, as a result of such measures, constantly to increase the usefulness of these examinations in the selection of the best qualified and most desirable public health workers.

State of Health of the People of Canada in 1943*

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THE state of health of the people of Canada during 1943, as measured by vital statistics, does not seem as favourable as in 1942, but on the whole the statistics do not reveal any mortality increases which might be viewed with alarm, and some very favourable records were established.

The most destructive war in history entered its fourth year and factors which are detrimental to public health continued to play their part: curtailment of public health services due to the shortage of personnel; lack of adequate medical and nursing services in many localities; congestion of population in urban centres with lack of housing facilities. On the other hand, the higher purchasing power of the population may have offset, to a certain degree, the effect of some of these factors by enabling more of the people to obtain wholesome nutritious food.

The most encouraging features of the statistical picture were the continued upward trend in the birth rate and the marked decrease in the maternal mortality rate.

The infant mortality, which has been decreasing steadily in the last decade, maintained the static level of 1942.

The incidence of communicable diseases was comparatively high but the increase was due almost entirely to measles and influenza. Among the childhood type of infectious diseases there was a slight increase in reported cases of whooping cough and decreases in chicken-pox, mumps, scarlet fever and diphtheria.

The reported incidence of poliomyelitis and encephalitis (infectious) was less than half that of 1942, while the mortality decreased to approximately one-third of the 1942 rate.

POPULATION

The population of Canada, exclusive of Yukon and the Northwest Territories, was 11,795,000 as of June 1, 1943, according to the estimates of the Dominion Bureau of Statistics.

BIRTHS

The number of births in 1943 was 283,035, with a birth rate of 24.0, which is again slightly higher than for the preceding year, when the rate was 23.4. The increase in the birth rate was maintained in all provinces except Nova

*Based on preliminary figures, exclusive of Yukon and Northwest Territories.

Scotia, where the birth rate fell from 25.9 in 1942 to 25.3 in 1943. Quebec led all provinces with a rate of 28.6 as compared with 28.0 last year, closely followed by New Brunswick with a rate of 28.3 for 1943 as against 27.3 in 1942. New Brunswick, Manitoba and British Columbia recorded the highest ratio increases of 1.0, 1.0 and 1.6, with British Columbia steadily improving her position in the matter of birth rates in relation to the rest of Canada.

TABLE I
BIRTH RATES PER 1,000 POPULATION, FOR CANADA
AND THE PROVINCES, 1943

CANADA	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
24.0	23.8	25.3	28.3	28.6	20.6	22.6	22.0	24.3	20.9

NUMBER OF BIRTHS AND BIRTH RATES PER 1,000 POPULATION,
1929 TO 1943

Year	Births	Rates	Year	Births	Rates	Year	Births	Rates
1929	235,415	23.5	1934	221,303	20.6	1939	229,468	20.4
1930	243,495	23.9	1935	221,451	20.4	1940	244,316	21.5
1931	240,473	23.2	1936	220,371	20.2	1941	255,317	22.2
1932	235,666	22.5	1937	220,235	20.2	1942	272,313	23.4
1933	222,868	21.0	1938	229,446	20.6	1943	283,035	24.0

MARRIAGES

There was a decrease in the number of marriages during the year. The number in 1943 was 110,930 compared with 127,372 in 1942, 121,842 in 1941, 123,318 in 1940, and 103,658 in 1939. The figures in Table II of rates by provinces show that the rate has decreased in every province in 1943.

TABLE II
MARRIAGE RATES PER 1,000 POPULATION FOR CANADA
AND THE PROVINCES, 1942 AND 1943

Year	Canada	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
1942..	10.9	8.1	11.7	10.6	10.0	11.9	11.4	8.0	11.2	13.1
1943..	9.4	7.2	10.1	8.6	9.8	9.2	9.5	7.3	9.8	10.4

NUMBER OF MARRIAGES AND MARRIAGE RATES PER
1,000 POPULATION, 1929 TO 1943

Year	Marriages	Rates	Year	Marriages	Rates	Year	Marriages	Rates
1929	77,288	7.7	1934	73,092	6.8	1939	103,658	9.2
1930	71,657	7.0	1935	76,893	7.1	1940	123,318	10.9
1931	66,591	6.4	1936	80,904	7.4	1941	121,842	10.6
1932	62,531	6.0	1937	87,800	8.0	1942	127,372	10.9
1933	63,865	6.0	1938	88,438	7.9	1943	110,930	9.4

DEATHS

The number of deaths in 1943 at all ages and from all causes was 118,494 compared with 112,978 in 1942 and 114,639 in 1941. The death rate has increased slightly from last year. In 1943 it was 10.0, in 1942 it was 9.7, in 1941

it was 10.0 and in 1940 it was 9.8. British Columbia had the highest death rate in 1943 with 11.1, Nova Scotia and New Brunswick were in second place with 10.6, and Saskatchewan was again the lowest with 7.9. In comparing the provincial death rates, however, it is necessary to keep in mind the younger age composition of the population in Saskatchewan.

TABLE III
DEATH RATES PER 1,000 POPULATION FOR CANADA
AND THE PROVINCES, 1943

CANADA	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
10.0	10.0	10.6	10.6	10.1	10.5	9.7	7.9	8.2	11.1

NUMBER OF DEATHS AND DEATH RATES PER 1,000
POPULATION, 1929 TO 1943

Year	Deaths	Rates	Year	Deaths	Rates	Year	Deaths	Rates
1929	113,515	11.3	1934	101,582	9.5	1939	108,951	9.7
1930	109,306	10.7	1935	105,567	9.7	1940	110,927	9.8
1931	104,517	10.1	1936	107,050	9.8	1941	114,639	10.0
1932	104,377	9.9	1937	113,824	10.3	1942	112,978	9.7
1933	101,968	9.6	1938	106,817	9.6	1943	118,494	10.0

During the period 1926 to 1943 the age distribution of deaths has changed, a larger proportion occurring after the age of 50 years compared with the proportion in 1926. The percentages for the two groups are shown in Table IV.

TABLE IV
PERCENTAGE DISTRIBUTION OF DEATHS
CANADA, 1926 AND 1943

Year	Under 50 years	50 years and over
1926.....	53	47
1943.....	34	66

The decrease in the percentage under 50 years of age is due to decreases in the number of deaths from Infectious and Parasitic Diseases, Diseases of the Respiratory System, Diseases of the Digestive System and Diseases peculiar to the First Year of Life.

The increase in the percentage 50 years and over was in a large part due to the increase in deaths from cancer and diseases of the heart and arteries.

INFANT MORTALITY

In 1943 Canadian children who died before their first birthday numbered 15,197 in comparison with 14,651 in 1942 and 15,236 in 1941. The death rate for infants in 1926 was 102 per 1,000 live births but by 1940 it had dropped to 56; in 1941 it rose to 60, but in 1942 it dropped again to 54 and in 1943 it was again 54. The greatest decrease has been in the rate for diarrhoea and enteritis. Prince Edward Island, New Brunswick and Quebec showed decreases in 1943, but the other provinces increases. These figures reveal the very significant improvement that has been brought about in infant deaths, but 12.8 per cent of all deaths still occur in the first year of life. New Brunswick had the highest

rate with 68, Quebec was second with 67, and British Columbia was lowest with 38.

Infant mortality rates as low as 30 per 1000, which have already been reached by New Zealand and certain areas in the United States, should be the prevailing level in most of the world.

TABLE V
DEATH RATES OF CHILDREN UNDER ONE YEAR PER
1,000 LIVE BIRTHS, 1943

CANADA	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
54	45	58	68	67	42	55	47	42	38

NUMBER OF DEATHS UNDER ONE YEAR AND DEATH
RATES PER 1,000 LIVE BIRTHS, 1929 TO 1943

Year	Deaths	Rates	Year	Deaths	Rates	Year	Deaths	Rates
1929	21,674	92	1934	15,870	72	1939	13,939	61
1930	21,742	89	1935	15,730	71	1940	13,783	56
1931	20,360	85	1936	14,574	66	1941	15,236	60
1932	17,263	73	1937	16,693	76	1942	14,651	54
1933	16,284	73	1938	14,517	63	1943	15,197	54

MATERNAL MORTALITY

The definite, continuous improvement in respect of maternal mortality which was noted during the past several years was again reflected in the 1943 rate. The number of deaths during the year was 784; in 1942 it was 818 and in 1941 it was 901. The death rate in 1943 was 2.8 compared with 3.0 in 1942 and 3.5 in 1941. The maternal mortality rate in 1936 was 5.6 per 1,000 live births and the halving of the rate by 1943 reflects the improvements provided for the care of Canadian mothers during childbirth.

It is difficult to measure the part played in this decrease by the sulpha drugs, increased hospitalization and the possibility of a greater degree of medical care due to urbanization.

Prince Edward Island had the highest rate during the year, 4.1, while Ontario had the lowest, 2.2.

TABLE VI
DEATH RATES PER 1,000 LIVE BIRTHS FOR CANADA
AND THE PROVINCES, 1943

CANADA	P.E.I.	N.S.	N.B.	Que.	Ont.	Man.	Sask.	Alta.	B.C.
2.8	4.1	3.7	3.1	3.2	2.2	2.4	2.5	2.7	2.5

NUMBER OF DEATHS AND DEATH RATES PER 1,000 LIVE
BIRTHS FROM PUERPERAL CAUSES, 1929 TO 1943

Year	Deaths	Rates	Year	Deaths	Rates	Year	Deaths	Rates
1929	1,341	5.7	1934	1,167	5.3	1939	967	4.2
1930	1,405	5.8	1935	1,093	4.9	1940	978	4.0
1931	1,215	5.1	1936	1,233	5.6	1941	901	3.5
1932	1,181	5.0	1937	1,071	4.9	1942	818	3.0
1933	1,111	5.0	1938	968	4.2	1943	784	2.8

TABLE VII:
Ten Leading Causes of Death in Canada, (1) 1931-43

Year	Diseases of the Heart			Cancer (all forms)			Accidental or violent deaths			Nephritis			Diseases of the arteries			Diseases peculiar to the first year of life			Pneumonia (all forms)			Tuberculosis (all forms)			Intercutaneous lesions of certain			Influenza (all forms)		
	Rating	No. of deaths	Rate per 100,000	Rating	No. of deaths	Rate per 100,000	Rating	No. of deaths	Rate per 100,000	Rating	No. of deaths	Rate per 100,000	Rating	No. of deaths	Rate per 100,000	Rating	No. of deaths	Rate per 100,000	Rating	No. of deaths	Rate per 100,000	Rating	No. of deaths	Rate per 100,000	Rating	No. of deaths	Rate per 100,000	Rating	No. of deaths	Rate per 100,000
1934	1	16,352	2	10,561	6	6,464	8	5,643	7,379	3	7,379	6,860	4	6,936	5	6,530	7	6,431	9	3,124	10	2,004	10	2,004	10	2,004	10	2,004	10	2,004
1935	1	16,069	2	11,156	4	6,898	8	6,176	8,302	3	8,302	7,411	7	7,411	5	7,313	7	6,937	10	2,520	9	3,392	9	3,392	9	3,392	9	3,392	9	3,392
1936	1	16,464	2	11,694	4	6,402	8	6,402	9,112	3	9,112	8,605	7	8,605	5	8,605	7	8,605	10	2,248	9	3,113	9	3,113	9	3,113	9	3,113	9	3,113
1937	1	16,840	2	11,963	5	7,358	8	6,530	9,609	3	9,609	8,644	7	8,644	4	8,644	7	8,644	10	2,005	9	2,660	9	2,660	9	2,660	9	2,660	9	2,660
1938	1	17,373	2	12,038	5	7,205	8	6,492	9,970	3	9,970	8,598	7	8,598	4	8,598	7	8,598	10	2,016	9	2,362	9	2,362	9	2,362	9	2,362	9	2,362
1939	1	18,562	2	12,322	4	7,173	9	6,538	10,864	3	10,864	9,174	7	9,174	5	9,174	7	9,174	10	2,060	9	2,789	9	2,789	9	2,789	9	2,789	9	2,789
1940	1	20,278	2	13,322	4	7,418	9	6,835	11,742	3	11,742	10,318	7	10,318	5	10,318	7	10,318	10	2,296	9	3,955	9	3,955	9	3,955	9	3,955	9	3,955
1941	1	26,602	2	13,417	3	8,442	4	7,399	6,733	5	6,733	6,252	9	6,252	8	6,252	9	6,252	10	2,411	9	4,567	9	4,567	9	4,567	9	4,567	9	4,567
1942	1	27,589	2	13,654	3	8,171	4	7,233	6,520	5	6,520	6,029	9	6,029	8	6,029	9	6,029	10	2,411	9	4,567	9	4,567	9	4,567	9	4,567	9	4,567
1943 (2)	1	29,238	2	14,135	3	8,218	4	7,461	7,012	5	7,012	6,636	9	6,636	7	6,636	8	6,636	10	2,406	9	4,724	9	4,724	9	4,724	9	4,724	9	4,724

Year	total deaths			Rate per 100,000			Per cent of population			Rate per 100,000			Per cent of population			Rate per 100,000			Per cent of population			Rate per 100,000			Per cent of population			Rate per 100,000		
	total deaths	Rate per 100,000	Per cent of population	total deaths	Rate per 100,000	Per cent of population	total deaths	Rate per 100,000	Per cent of population	total deaths	Rate per 100,000	Per cent of population	total deaths	Rate per 100,000	Per cent of population	total deaths	Rate per 100,000	Per cent of population	total deaths	Rate per 100,000	Per cent of population	total deaths	Rate per 100,000	Per cent of population	total deaths	Rate per 100,000	Per cent of population	total deaths	Rate per 100,000	Per cent of population
1934	15.1	152.4	4	10.6	98.6	6.5	60.3	52.9	7.3	65.8	58.7	6.4	64.7	57.0	7.3	68.5	60.0	6.1	59.1	52.1	2.0	18.7	15.7	2.0	18.7	15.7	2.0	18.7	15.7	2.0
1935	15.2	156.4	4	10.6	103.0	6.5	63.7	57.0	7.3	70.7	60.9	6.2	68.4	58.4	7.0	70.7	60.9	6.2	68.4	58.4	2.0	18.7	15.7	2.0	18.7	15.7	2.0	18.7	15.7	2.0
1936	15.3	159.2	4	10.6	107.0	6.5	64.7	58.4	7.3	70.7	60.9	6.2	68.4	58.4	7.0	70.7	60.9	6.2	68.4	58.4	2.0	18.7	15.7	2.0	18.7	15.7	2.0	18.7	15.7	2.0
1937	15.4	162.7	4	10.6	108.5	6.5	64.7	58.4	7.3	70.7	60.9	6.2	68.4	58.4	7.0	70.7	60.9	6.2	68.4	58.4	2.0	18.7	15.7	2.0	18.7	15.7	2.0	18.7	15.7	2.0
1938	15.5	165.0	4	10.6	110.2	6.5	64.7	58.4	7.3	70.7	60.9	6.2	68.4	58.4	7.0	70.7	60.9	6.2	68.4	58.4	2.0	18.7	15.7	2.0	18.7	15.7	2.0	18.7	15.7	2.0
1939	15.6	167.4	4	10.6	111.8	6.5	64.7	58.4	7.3	70.7	60.9	6.2	68.4	58.4	7.0	70.7	60.9	6.2	68.4	58.4	2.0	18.7	15.7	2.0	18.7	15.7	2.0	18.7	15.7	2.0
1940	15.7	169.8	4	10.6	113.4	6.5	64.7	58.4	7.3	70.7	60.9	6.2	68.4	58.4	7.0	70.7	60.9	6.2	68.4	58.4	2.0	18.7	15.7	2.0	18.7	15.7	2.0	18.7	15.7	2.0
1941	15.8	172.2	4	10.6	115.0	6.5	64.7	58.4	7.3	70.7	60.9	6.2	68.4	58.4	7.0	70.7	60.9	6.2	68.4	58.4	2.0	18.7	15.7	2.0	18.7	15.7	2.0	18.7	15.7	2.0
1942	15.9	174.6	4	10.6	116.6	6.5	64.7	58.4	7.3	70.7	60.9	6.2	68.4	58.4	7.0	70.7	60.9	6.2	68.4	58.4	2.0	18.7	15.7	2.0	18.7	15.7	2.0	18.7	15.7	2.0
1943 (2)	16.0	177.0	4	10.6	118.2	6.5	64.7	58.4	7.3	70.7	60.9	6.2	68.4	58.4	7.0	70.7	60.9	6.2	68.4	58.4	2.0	18.7	15.7	2.0	18.7	15.7	2.0	18.7	15.7	2.0

(1) Exclusive of Yukon and the Northwest Territories (2) Preliminary figures.

NOTE: It should be noted that the effects of certain changes in classification and re-arrangement of titles provided in the Fifth Revision of the International List of Causes of Death are apparent in the following: Tuberculosis, Diseases of the heart, Diseases peculiar to the first year of life.

TEN LEADING CAUSES OF DEATH

Table VII gives the number of deaths in Canada from the ten leading causes for the ten years 1934 to 1943, placed in order of rating for 1943 and indicating: (a) the rating for each year, (b) the number of deaths, (c) the ratio of each cause to the total deaths, and (d) the crude death rate per 100,000 population.

CARDIO-VASCULAR-RENAL DISEASES

In 1941 the total deaths from diseases of the heart and diseases of intracranial lesions of vascular origin showed a marked increase over 1940 and diseases of the arteries showed a marked decrease. The increase in the first two and the decrease in the third cause are due to a large extent to a change in classification of arteriosclerosis, when associated with other causes, as called for by the Fifth Revision of the International List of Causes of Death. An adjustment could be made for the deaths which are now included in intracranial lesions of vascular origin but the adjustment could not be made for those included with diseases of the heart. If the deaths from these three causes were added together, the total shows a steady increase from 26,855 deaths in 1934 to 40,974 in 1943. It is to be expected that there will be an ever-increasing mortality from this group of diseases as the proportion of people in the older age groups increases.

Nephritis. There was an increase in the number of deaths from nephritis in 1943, when the number was 7,461 compared with 7,233 in 1942 and 7,399 in 1941. The death rate was 63.3 in 1943; in 1942 it was 62.2 and in 1941 it was 64.4. Quebec had the highest death rate, 100.5, and Alberta the lowest, 35.9.

TABLE VIII

DEATHS AND DEATH RATES PER 100,000 POPULATION FOR THE YEARS 1934 TO 1943
NEPHRITIS—International List Nos.: (1929) 130-132; (1938) 130-132

	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943
Deaths.	5,643	6,176	6,402	6,530	6,492	6,538	6,835	7,399	7,233	7,461
Rate...	52.6	57.0	58.6	59.2	58.3	58.1	60.1	64.4	62.2	63.3

CANCER

Each year the number of deaths reported from all forms of cancer continues to increase, although there are indications that the peak in the rate may be in sight, there being an increase of 2.5 in 1943 as against increases of 5.0 and 6.0 a few years ago. In 1943 there were 14,135 deaths; in 1942 there were 13,654 and in 1941 there were 13,417. The death rate in 1943 was 119.8 as compared with 117.3 in 1942 and 116.8 in 1941. British Columbia had the highest rate again this year, 143.3, followed by Ontario with 132.1. Saskatchewan had the lowest rate with 92.5. The wide variation in the rates of the respective provinces is due largely to the differences in age composition.

TABLE IX
DEATHS AND DEATH RATES PER 100,000 POPULATION FOR THE YEARS 1934 TO 1943
CANCER—International List Nos.: (1929) 45-53; (1938) 45-55

	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943
Deaths.	10,581	11,156	11,694	11,963	12,038	12,399	13,322	13,417	13,654	14,135
Rate...	98.6	103.0	107.0	108.5	108.1	110.2	117.2	116.8	117.3	119.8

COMMUNICABLE DISEASES

Communicable diseases reported, exclusive of syphilis, gonorrhoea and minor communicable diseases, amounted to 217,760 as compared with 176,696 in 1942. The number of deaths attributable to the communicable diseases was 10,143 compared with 9,200 in 1942. The death rate per 100,000 population was 85.4 in 1943, 77.8 in 1942, and 145.5 in 1941. The ratio of deaths per 100 cases was 4.6 compared with 5.1 in 1942 and 6.6 in 1941.

Measles. In 1943 the number of reported cases of measles held first place in prevalence among the communicable diseases.

TABLE X
MEASLES

Number of Cases Reported			Deaths						1938-1942	
			Number			Rate				
1943	1942	1941	1943	1942	1941	1943	1942	1941	Median cases	Average deaths
60,485	26,258	81,051	190	131	325	1.6	1.1	2.8	44,477	214

Manitoba had the highest death rate, 3.4 per 100,000, Saskatchewan was second with 3.1, and Nova Scotia and Ontario lowest with 0.8.

Rubella (German Measles). There were 4,531 cases of this disease reported as against the epidemic figure of 56,577 in 1941 and 4,511 cases in 1942. In 1943 there were two deaths compared with one in 1942 and eight in 1941.

Chickenpox. There were 30,453 cases of this disease in 1943 compared with 30,914 in 1942 and 27,867 in 1941. The median for the five years 1938 to 1942 was 27,867. The number of deaths for 1943 was 29 as compared with 28 in 1942 and 19 in 1941. The death rate for 1943 was 0.25; in 1942 it was 0.24 and in 1941 it was 0.17.

Smallpox. There were 6 cases of smallpox reported in 1943 and 6 cases in 1942 and 26 cases in 1941, with no deaths in the three years. The median number of cases for the five years 1938 to 1942 was 26, with no deaths.

Mumps. In 1943 the number of reported cases was 48,304, putting mumps in second place in prevalence.

In 1942 the provinces of Ontario, British Columbia and Quebec reported epidemics; in 1943 Ontario and British Columbia again reported epidemics, with Nova Scotia, Manitoba and Alberta also reporting cases in epidemic proportions.

TABLE XI
MUMPS

Number of Cases Reported			Deaths						1938-1942	
			Number			Rate				
1943	1942	1941	1943	1942	1941	1943	1942	1941	Median cases	Average deaths
48,304	52,344	22,936	35	46	19	0.3	0.4	0.2	13,498	22

Scarlet Fever. This disease in 1943 was above the median prevalence in cases but below the average in deaths and death rates.

TABLE XII
SCARLET FEVER

Number of Cases Reported			Deaths						1938-1942	
			Number			Rate				
1943	1942	1941	1943	1942	1941	1943	1942	1941	Median cases	Average deaths
18,639	20,648	16,966	100	129	117	0.8	1.1	1.0	16,916	148

Quebec had the highest death rate, 1.4, and Saskatchewan the second highest, 1.0. Prince Edward Island had no deaths.

Diphtheria. There was a decrease in the number of cases for this disease from 2,955 in 1942 to 2,804 in 1943, but an increase in the number of deaths from 256 in 1942 to 287 in 1943.

TABLE XIII
DIPHTHERIA

Number of Cases Reported			Deaths						1938-1942	
			Number			Rate				
1943	1942	1941	1943	1942	1941	1943	1942	1941	Median cases	Average deaths
2,804	2,955	2,866	287	256	240	2.4	2.2	2.1	2,897	296

Quebec had the highest number of cases, 1,353, and Nova Scotia was second with 780, but the highest death rate was recorded in Nova Scotia, 9.2, with New Brunswick second with 6.9. The lowest rate was in Ontario, 0.2.

Whooping-cough. There were 19,082 cases of this disease in 1943 and 416 deaths. The death rate was 3.5.

TABLE XIV
WHOOPIING-COUGH

Number of Cases Reported			Deaths						1938-1942	
			Number			Rate				
1943	1942	1941	1943	1942	1941	1943	1942	1941	Median cases	Average deaths
19,082	18,384	16,647	416	559	437	3.5	4.8	3.8	17,972	532

Manitoba had the highest death rate, 8.3, Quebec was second with 6.0 and Alberta lowest with 1.5.

Acute Poliomyelitis and Polioencephalitis. The number of cases in 1943 was 327 with 26 deaths and a death rate of 0.2. In 1942 there were 687 cases with 64 deaths and a death rate of 0.5. In 1941, an epidemic year, cases numbered 1,881 with 68 deaths and a death rate of 0.6. The median for the five-year period 1938 to 1942 was 577 cases with an average of 64 deaths and an average death rate of 0.6. The death rate per 100 cases was 8.0, whereas in 1942 it was 9.3 and in 1941 it was 3.6.

TABLE XV
DEATHS AND DEATH RATES PER 100,000 POPULATION FOR THE YEARS 1934 TO 1943
POLIOMYELITIS—International List Nos.: (1929) 16; (1938) 36

	1934	1935	1936	1937	1938	1939	1940	1941	1942	1943
Deaths.	84	64	97	200	83	56	48	68	64	26
Rate...	0.8	0.6	0.9	1.8	0.7	0.5	0.4	0.6	0.5	0.2

Cerebrospinal Meningitis. There were 516 cases of this disease reported in 1943, with 124 deaths. The death rate was 1.1. In 1942 there were 765 cases with 147 deaths and the death rate was 1.3. In 1941 there were 1,465 cases with 206 deaths and the death rate was 1.8.

*Encephalitis Lethargica.*¹ There were 43 cases of this disease reported in 1943 with 60 deaths, and the death rate was 0.5. In 1942 there were 81 cases with 65 deaths and the death rate was 0.6. In 1941 there were 1,133 cases reported, with 179 deaths and a death rate of 1.6.

Influenza. In 1943 there were 16,839 cases and in 1942 there were 3,397 while in 1941 there were 9,656. In 1943 there were 2,408 deaths compared with 1,227 in 1942 and 2,411 in 1941. The death rate for 1943 was 20.4; for 1942 it was 10.5 and for 1941 it was 21.0. The average death rate for the five years 1938 to 1942 was 22.4 while the median number of cases was 9,656. Six of the provinces reported cases in epidemic proportion in 1943. Quebec had the highest death rate, 24.1, Manitoba was second, 22.5, and New Brunswick was lowest, 13.0.

Pneumonia. In 1943 there were 633 cases² of pneumonia reported as compared with 2,048 in 1942 and 1,822 in 1941. The median prevalence for the five years 1938 to 1942 was 2,048. There were 6,322 deaths in 1943 compared with 5,778 in 1942 and 5,955 in 1941. The death rate in 1943 was 53.6, in 1942 it was 49.7, and in 1941 it was 51.8. The average death rate for the five years 1938 to 1942 was 56.1. New Brunswick had the highest rate, 72.6. Nova Scotia was second, with 60.3, and Saskatchewan was lowest, with 47.6.

Tuberculosis. There were 12,361 new cases of tuberculosis (all forms) reported in 1943, as compared with 12,015 in 1942 and 10,475 in 1941. Deaths in 1943 numbered 6,192 compared with 5,980 in 1942 and 6,072 in 1941. In 1943 the death rate was 52.5, in 1942 it was 51.4, and in 1941 it was 52.8, while

¹Encephalomyelitis is included under this title in the International List of Causes of Death. In 1941 there were 1,109 cases reported, with 23 deaths and a death rate of 0.2.

²A number of the provinces discontinued reporting cases in 1943.

the average death rate for the five years 1938 to 1942 was 52.7. The figures for the fifteen years 1926 to 1940 reveal a gradual downward trend. The years 1941, 1942 and 1943 show a slackening in the downward trend with a slight increase in 1943. Quebec had the highest death rate, 82.3; Nova Scotia was second, with 68.7, and Ontario was lowest, with 28.8.

The following table, in which the rates from 1940 to 1943 are based on the estimated population at mid-year 1939 for England and Wales, indicates that the upward trend of the disease which was apparent during the first months of war has been arrested and that in 1942 and 1943 the rate was below the pre-war level.

TABLE XVI
TUBERCULOSIS—England and Wales

	Respiratory		Other Forms	
	Number of Deaths	Rate per 100,000 Population	Number of Deaths	Rate per 100,000 Population
1938.....	21,260	51.6	4,258	10.3
1939.....	21,543	52.0	4,080	9.8
1940.....	23,660	57.1	4,484	10.8
1941.....	23,633	57.0	5,036	12.1
1942.....	20,987	50.6	4,557	11.0
1943.....	21,341	51.5	4,308	10.4

Syphilis. There were 851 deaths reported with a death rate of 7.2 in comparison with 957 deaths and a death rate of 8.2 in 1942, and 913 deaths with a death rate of 7.9 in 1941. The average rate for the five years 1938 to 1942 was 7.1. These figures do not represent the actual mortality from syphilis, as many deaths which are directly caused by the disease are reported under other causes.

Diarrhoea and Enteritis. There was a decrease in the mortality from these diseases in 1943, when the number of deaths was 1,870 and the death rate 15.9. Eighty-three per cent of these deaths were under 2 years of age. In 1942 there were 2,400 deaths and the death rate was 20.6, and in 1941 there were 2,319 deaths and the death rate was 20.2, while the average death rate for the five years 1938 to 1942 was 20.4. Quebec had the highest rate, 32.5, Manitoba was second with 16.5 and British Columbia was lowest with 5.4.

Typhoid and Paratyphoid. There was a slight increase in both the number of cases and deaths from these diseases. In 1943 there were 1,154 cases and 114 deaths in comparison with 1,142 cases and 108 deaths in 1942, 1,550 cases and 165 deaths in 1941 and a five-year median of 1,550 cases and an average of 177 deaths for 1938 to 1942. The death rate for 1943 was 1.0, while the ratio of deaths per 100 cases was 9.9 as compared with a death rate of 0.9 and a ratio of 9.5 in 1942 and 1.4 and 10.6, respectively, for 1941. New Brunswick and Quebec had the highest death rates, 2.2, Prince Edward Island was second with 1.1, and Saskatchewan and Alberta were lowest with 0.1.

Undulant Fever. There were 189 cases of this disease reported in 1943 with 4 deaths and a death rate of 0.03 as compared with 152 cases, 8 deaths and a rate of 0.07 in 1942, and 168 cases, 4 deaths and a death rate of 0.03 in

1941. The median prevalence of this disease for the five years 1938 to 1942 was 152, the average number of deaths, 7, and the average death rate, 0.06.

Rocky Mountain Spotted Fever. There was 1 case reported in Alberta but no deaths.

Anthrax. One case was reported in Quebec and 1 in Alberta, with no deaths.

Leprosy. There was 1 case reported in Ontario and 2 deaths were recorded in British Columbia.

Trachoma. There was a further decrease in the incidence of this disease during 1943, with 26 cases reported, as compared with 40 cases in 1942 and 51 cases in 1941. British Columbia reported 17 cases, Saskatchewan 5, Manitoba 3, and Alberta one case in 1943 with no deaths.

VIOLENT DEATHS

In 1943 there were 8,218 violent deaths with a death rate of 69.7 as compared with 8,171 deaths and a death rate of 70.2 in 1942, 8,442 deaths and a rate of 73.5 in 1941, and the five-year averages of 7,682 deaths and 67.5 rate for 1938 to 1942. British Columbia had the highest rate, 101.3, Nova Scotia was second, with 85.2, while Prince Edward Island was lowest with 51.6.

Accidental Deaths. There were 7,332 accidental deaths in 1943, with a rate of 62.2 as compared with 7,202 deaths and a death rate of 61.9 in 1942, 7,409 deaths and a death rate of 64.5 in 1941. The average death rate for the five years 1938 to 1942 was 58.2.

Included in the accidental deaths were 1,432 due to automobile accidents, which gives a death rate of 12.1. The number of deaths in 1942 was 1,409 with a death rate of 12.1, and in 1941 there were 1,852 deaths with a death rate of 16.1. The average death rate for the five years 1938 to 1942 was 14.3. British Columbia had the highest rate, 17.2, New Brunswick was second with 15.1, and Saskatchewan was lowest with 3.9. The restrictions on the use of automobiles caused by gasoline shortages would appear to have had an effect upon the death toll from motor traffic, the death rate for 1942 and 1943 showing a decrease over past years.

Suicides. There was a further reduction in the number of suicides in 1943, when the number was 755 as compared with 839 in 1942 and 896 in 1941. The death rate in 1943 was 6.4; in 1942, 7.2; in 1941, 7.8, with an average death rate for 1938 to 1942 of 8.1. Alberta had the highest death rate, 10.0, British Columbia was second with 9.2, and New Brunswick and Quebec had the lowest rate, 3.2.

Included in the total of violent deaths are 125 homicides and 6 legal executions.

HOSPITALS*

A review of the state of the health of the people would not be complete without some statement of the number of people receiving care in the tuberculosis sanatoria, mental institutions, hospitals for incurable, and general public and private hospitals.

*Compiled from figures supplied by Mr. J. C. Brady, Institutional Branch, Dominion Bureau of Statistics.

Table XVII shows the admissions to tuberculosis sanatoria according to age and sex in 1943. Table XVIII classifies them according to type at the time of admission.

TABLE XVII
TUBERCULOSIS SANATORIA
ADMISSIONS, BY AGE AND SEX, 1943

Age Group	Male	Female	Total
0 - 19 years.....	940	1,238	2,178
20 - 39 ".....	3,225	3,185	6,410
40 - 69 ".....	1,794	695	2,489
70 years or over.....	86	31	117
Total.....	6,045	5,149	11,194

TABLE XVIII
TUBERCULOSIS—CANADA, 1943
ADMISSIONS TO SANATORIA, BY TYPE

Type	Total
Childhood.....	242
Minimal.....	2,202
Moderately advanced.....	3,832
Far advanced.....	3,939
Pleurisy with effusion.....	441
Pleurisy without effusion.....	50
Non-pulmonary.....	488
Total.....	11,194

The total expenditure for the administration of these sanatoria was \$8,619,449 for the year 1943.

Table XIX shows the classification of patients in mental institutions according to mental status, by sex.

TABLE XIX
MENTAL INSTITUTIONS
CANADA, 1943

CLASSIFICATION OF PATIENTS AT END OF YEAR
ACCORDING TO MENTAL STATUS, BY SEX

	Male	Female	Total
Insane.....	19,644	15,871	35,515
Mental Defectives.....	5,338	4,797	10,135
Epileptics.....	378	303	681
All other types.....	173	127	300
Total.....	25,533	21,098	46,631

The total expenditure for the maintenance of these patients in 1943 was \$18,204,643.

The figures in Table XX show the admissions and patients under care in the acute and incurable disease hospitals in Canada. The figures given are for 1942 as all the reports for 1943 have not been received.

TABLE XX
ADMISSIONS DURING YEAR AND AVERAGE DAILY PATIENTS, 1942

Type of hospital	Admissions during year	Average daily patients under care
Public.....	1,079,007	37,308
Private.....	46,225	2,222
Incurable.....	1,775	2,768

Personnel Policies and Practices in Public Health Nursing

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PUBLIC health work is a partnership concerned with promoting good public relations. No matter how skilled your staff, or complete your equipment, or beautiful your building, the health of the public will not be greatly advanced if your relations to the people in your community are not happy. The impression which the public receives of your work stems mainly from personal contacts—day in and day out. It is trite but true to say that even the tone of voice of the clerk who answers the telephone influences the public's reaction to your service. How much more important is it then that the members of a staff who meet clients at home, on the street, and in clinics be equipped with every advantage and skill in making and keeping friends. Underlying the productive capacity of workers to win the public's friendship are smooth-working relationships *within the staff itself*—what we call fair personnel policies and sound administrative practice.

Let us examine the working relationship between the health officer and the nursing staff. What factors promote good service to the public?

The public health nurse expects three perfectly definite things from the health officer.

The first is *information*. She expects, if she is new to the position, to be told about the health department's program, the plan of work, the special problems in the community as the health officer sees them. As she becomes familiar with these, she expects to be kept informed of new developments, of changes in policy or schedules. Many a health officer has been known to initiate new services, discontinue routines or change policies without discussing them with the nurses—indeed without even notifying them. It is pretty disconcerting when this happens. Not only is the day's schedule upset, but sometimes the staff nurse is left "out on a limb" quite unsupported by her department. May I give a simple example?

A health officer discontinued Schick testing the children entering school in the preschool clinic, having agreed with the school physician that the latter would take over the job. The field nurse was not notified. She had in the meanwhile laboured hard to persuade Mrs. Jones to take her two preschool children to the clinic for the Schick test. At last Mrs. Jones appeared, her brood in tow, only to be told that the test had been discontinued. How much faith will Mrs. Jones have in her public health nurse in the future? How kindly does the nurse feel toward her health officer?

Presented at the thirty-third annual meeting of the Canadian Public Health Association, held in Toronto on November 6-8, 1944.

The public health nurse wants information of a formal kind also. Are you planning to use a new drug, new technique or new approach to a problem? The more the public health nurse knows about it the better assistance she can give you. Keep her up to date, please! Urge her to attend professional meetings and subscribe to professional journals. Share your new books with her. She wants to feel that you welcome her questions. Make it easy for her to consult you. If several nurses are employed, they will expect some formal in-service training, especially before the introduction of a new service.

The second attribute the nurse expects to find in the health officer is *understanding*. When only three people show up at clinic when 30 are expected, when the newspaper reporter misquotes the figures of the annual budget, when Mr. John Doe blows up in the office about the "neglect" of his condition—please get the facts before you take a stand implicating the nurse. The nurse protects you from many a hard knock and she expects you to understand the conditions under which she is working. She assumes you are on her side. In a true partnership not only are triumphs and failures shared but policies are adhered to until mutually abandoned. A public health nurse once said to me, "When Dr. Blank gives us his orders, they are not orders at all, but plans for a joint adventure in which we have equal stake."

Lastly, the public health nurse looks to the health officer for *inspiration*, and I really mean inspiration. Is her work good? Why not tell her so. Have you just received figures showing a lowered death rate from tuberculosis, or lower infant mortality? Share the report with the nurse before she reads it in the newspaper. Has that appropriation come through for a new X-ray machine? Interrupt staff conference and tell the nurses! Most important, give credit where credit is due. Elementary? "Very elementary, Dr. Watson!"

To consider the reverse side of this partnership. What does the health officer expect of the public health nurse? Again, three things.

The first is *preparation*. He expects the nurse to have had sufficient special training in public health to understand the aims of his program and the methods of attaining them, so that he can entrust the nursing service to her. If only one nurse is serving on his staff, he expects her to come to him when necessary, but to be quite capable of planning her work and proceeding without his constant oversight. He wants to have the kind of confidence in her that he would have in a business partner, so it is up to you—in your turn, Miss Public Health Nurse, to share your successes and failures relating to the service with him and discuss new plans before adoption.

Secondly, we may as well face it—the health officer seeks a *good-looking nurse!* Perhaps no more hopefully than the public health nurse looks for a handsome health officer. We might compromise on personal neatness, good health and mental alertness. Throw in good judgment, dignity and tact, and you have an acceptable worker under any title. Naturally, you want a contented worker. Pleasant, convenient living quarters, a good salary with regular increases, promotion for satisfactory work, and generous vacations and sick leaves all tend to make happy as well as healthy workers. You should, of course, require a satisfactory health record when a nurse enters a position.

If you want to maintain energetic, interested and alert nurses may I suggest you set a good example yourself, doctor? Do you—for instance—take preventive sick leave, a long week-end or two or three consecutive days off, when you have been putting in a lot of overtime? Do you come back on a part-time schedule for a week or two after a bout with serious illness? Do you stay home when you are in the coryza stage of the common cold? If you do these things, the nurses will, too. After all, a teacher with the sniffles is not a very convincing example to others of the grave danger of spreading disease through coughs and sneezes. One of the reasons you have a right to expect a wholesome-looking nurse is because the public judges your product by her appearance. Sickly, untidy, weary nurses cannot sell health, whereas an attractive, workmanlike appearance inspires confidence. Miss Marion Howell has expressed this well: "In one day a public health nurse, attractively uniformed, well poised, cheerful and enthusiastic, making her way from home to home, from school to school, from one part of a large factory to another, or meeting many people in clinic, may do much to make or mar the standing of nursing in the community."*

This is the day of uniforms, and their convenience, general becomingness and good style are appealing to all nurses, besides providing the public with a means of recognition. If your nurse wants to wear a uniform, encourage her to do so.

The third quality a health officer looks for in a public health nurse is *maturity of judgment* and action. I really think a health officer expects more self-reliance and common sense from a public health nurse than from anyone else in the world—not excepting his wife. When everything goes wrong, half the staff are ill, flu is rampant, the clinic overflowing with patients and the doctor's car breaks down six miles from the office—the public health nurse must carry on. You expect her to conduct herself on all occasions with restraint, affability and intelligence. You expect her to improvise a sphygmomanometer sleeve from an old tire tube or a tire tube from an enema bag! Nothing is beyond her. And that is as it should be. Reliability is a fundamental characteristic and indispensable to the program you are directing.

What if the business partnership does not live up to these high ideals? The health officer may find the nurse flighty, the nurse may look in vain for explanations of policies from the health officer. That is the point at which the nursing supervisor or consultant has her greatest usefulness. She steps in as the "great facilitator." To her should go all problems relating to individual difficulties. I well remember the occasion some years ago when a health officer with a staff of ten nurses asked why he should spend city money on a supervisor. He had always supervised the nurses himself. Our national staff gathered a bushel-basketful of reasons. I give you a condensed version of them.

Primarily, the supervisor adjusts the details of the nurses' work to the needs of the community in accordance with the large plan adopted by the health officer—thereby saving time and overlapping of effort, and stretching the service to reach more people.

**Public Health Nurse*, May 1941, page 298.

The supervisor interprets the capacity and reactions of the staff to the administrator and his administrative policies to the staff. She is an impartial spokesman for the members of the partnership. This interpretation is not something that is done at ten o'clock Monday morning. It is a continuing, finely adjusted process requiring close observation of the daily work of the staff and a clear understanding of the purpose back of the health officer's plans.

The supervisor serves as a teacher of (1) the new nurse learning the work, (2) the nurse not so completely prepared as we could wish, (3) the nurse facing new or difficult situations, (4) the whole staff when the number warrants in-service training programs, (5) the students assigned for field practice.

The supervisor develops community relationships and resources, is sensitive to social trends and legislation as they affect the nursing work, and finally, the supervisor guides each member of the staff toward the attainment of her fullest capacities.

Today, every health officer has a right to expect good work from well-prepared nurses under competent supervision.

I have tried to offer some very simple suggestions for strengthening personnel policies in health agencies and to point out places at which the machinery may squeak a bit, thus threatening the good impression we make upon the public. Whether you *need* to use the oil can—or want to—only you who are in the partnership know. I recommend listening rather frequently for sounds of faulty gears.

NATIONAL HEALTH WEEK

NATIONAL Health Week, a project in health education which is sponsored by the Health League of Canada, has been scheduled for the week of February 4th and has received expressions of endorsement from a number of the Provinces. Two years ago a National Social Hygiene Day, which has been observed in the United States for a number of years, was introduced in Canada under the auspices of the League. The Health Week is an extension of the National Social Hygiene Day and the program will include health and religion, health and the school, health and the home, and health and social hygiene.

The Fight Against Tuberculosis in Montreal

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THE campaign against tuberculosis in Montreal has already achieved most gratifying results. Mortality, which reached far beyond 205 in 1915, has been reduced to 72.7 in 1943. If we compare this figure with those of other provinces, we can see that it is high. Lengthy dissertations have been offered to explain the divergence. I should like to summarize them here.

The part played by the Koch bacillus in tuberculosis is today well known: there can be no tuberculosis without the infecting bacillus. Have we not, however, neglected to a certain degree the importance of the soil in which the bacillus develops and, in stressing the importance of the microbe as a cause, have we not left in the background a subject concerning which everything has not by any means been said?

It is admitted that the primary infection by tuberculosis is of exogenous origin; that is to say, the microbe comes from an infectious tuberculous patient, while secondary tuberculous infection is almost always endogenous. Our own bacilli, indestructible remains of an old primary infection, carefully preserved in hilar or parenchymatous lymph nodes, come into play, because of the breaking down of our resistance due to overwork, intervening illness, under-nourishment, insanitary housing, puberty or menopause. Freed from the forces which kept them on the defensive, the bacilli emerge from their concrete shelters, engage in attack, moderately or violently, and the defences, broken down, overcome, give way; then, unless reinforcements in the form of rest, collapse treatment, etc., are forthcoming, another victim is on a fair way to add his name to the list of casualties from tuberculosis.

And, if we take for granted that in Montreal a very high percentage of the population carry tuberculosis germs in their hilar nodes, practically all are possible victims of the awakening of a primary infection from the past.

What factors preserve the soil or determine the system's resistance or surrender to tuberculous infection? Added to factors such as malnourishment, poor housing and conditions of work, and as a corollary a high birthrate and negligence—which among the poorer classes follows naturally from their inability to give the required attention to health—the medical expenses involved far exceed the limits of the budget.

Poverty makes of coddling a prohibitive luxury. Privations, physical discomfort endured year in and year out because means are lacking for medical advice or, if it can be obtained, cannot be put into effective practice unless the doctor wants to provide treatment without charge, lead some people to believe that illness is a necessary, unavoidable and incurable evil against which the

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doctor is, in fact, powerless or a dangerous profiteer who must be avoided. And no one speaks with greater volubility and greater conviction of the doctor's extravagant demands than a poor person, when, as a matter of fact, such a person contributes nothing or next to nothing to the revenue of the practising physician. True, there are the clinics, dispensaries and hospitals where the needy too often imagine that they are being received as a nuisance. The poor have a very touchy pride and their inferiority complex makes them timid, or through exaggerated compensation, arrogant. Such a person is then rebuffed or severely put in his place and finally shown the door.

Stress has been laid, and with cause, upon our high birth rate; or, in other words, the large family which, crowded in a house that is too small, deprived of sufficient nourishment—for to-day, contrary to all good sense, a large family is almost synonymous with poverty—multiplies, by the number of children, the risk of contagion, if there is an expectorator of bacilli in the home. Statistics prove that, in a poor district, contagion reaches 1 out of 5 contacts while in a better-class neighbourhood it reaches 1 in 10.

Much has been written about slums in Montreal. Strictly speaking, I do not believe that there are very many real slums in Montreal. However, the dwelling called a "flat," built on a lot with a 25-foot frontage, which allows of lighting only from front and rear, with inner rooms which rely largely or even entirely on artificial lighting, is far from being an ideal lodging. It is unfortunate that, in a city where space abounds, encouragement has not been given to a type of construction which would ensure lighting on at least three sides.

The influx to Montreal of a working population seeking high wages in war industry aggravates the housing problem, and the ensuing crisis, the occupation of unsuitable premises and the doubling up of families in houses scarcely big enough to accommodate one family, increases the danger of infection, and, to an alarming extent, the number of contacts.

Nutrition has also become a thorny problem. "Tell me what you eat and I will tell you who you are" can be translated into reality in the emaciated bodies, where tuberculosis finds a soil predisposed to receive it. We must, firstly, furnish large families with enough revenue to provide sufficient healthful food. However, the habit, acquired through lack of funds, of living on a diet which is unavoidably deficient, has deprived the tastes to such a point that to-day some people do not know what to eat and, even if they were given proper food, would not know how to prepare it properly. They would dislike its taste, so accustomed are they to their improper daily ration. Public-health specialists have been surprised, almost overcome, at seeing the contents and nature of a workman's menu, which is bare of healthful food and replete with the coarsest and most insipid concoctions.

The child, no more than the adult, should live to eat but it must eat not only to live but also to grow, develop properly, then survive by preserving intact its strength and its resistance. Why is there such a throng of sickly children, with soft, misplaced teeth, with bones susceptible to every manner of unusual curvature, with anaemic complexions and pinched faces, if this is not the result of a perpetual empty stomach or one filled with food deprived of all

nourishing qualities? Even vitamins will not make up for the lack of enough proper nourishment.

By well-directed publicity, lectures, pamphlets, etc., we should, I think, after the war, seek to combat this tendency and try to re-establish a taste for good rational cooking.

It is understood, and statistics prove it beyond doubt, that long hours, certain kinds of work, or those which expose the system to harmful dust or to the rigors of the climate or season, not only cause variations in the mortality rate from tuberculosis, but also tend to increase it in proportion as the above-mentioned conditions are present.

Our unemployed, under-nourished for several years, were obliged, within a few days of the outbreak of war, to work for long hours, sometimes in daytime, sometimes at night, in temporary quarters, erected hastily and often not very healthful. The increased rate of deaths from tuberculosis threatens, for some years to come, to bring statistics to a figure which we had begun to hope would never again be reached.

We should also condemn the employment of children, in whom woeful after-effects are likely to occur.

In face of these facts and so many others which we shall recall at the proper time, valuable but insufficient efforts have been made. To offset insanitary conditions and crowded workmen's dwellings, vacation camps, health camps, and scouts' camps have been provided where thousands of children go during the summer. The City of Montreal has opened, here and there, playgrounds where smaller children can enjoy themselves in a healthful manner and derive benefit from the sun. The number of wading-pools in playgrounds should be increased. The Provincial Government has printed pamphlets on nutrition and school canteens have furnished milk to small children. We must admit that in spite of their value these efforts are not sufficient.

If the receptive soil is important, the part played by the microbe must not however be forgotten. Since the early part of the century, organizations have sought to find the infecting agent—or, to put it in other words, the tuberculous person who emitted bacilli—in order to cure him if possible, to teach him at least the precautions which he must take to prevent his disseminating contagion, to give him hospital care, and to examine and follow the contacts in order to locate possible cases of tuberculosis.

The importance of the bovine bacillus has not been neglected and tuberculosis of the ganglia and bones is surely on the decline since herds have been tuberculin-tested, sick cattle have been killed, and milk has been pasteurized. Milk sold in Montreal is now pasteurized in the proportion of 96.4 per cent.

The tuberculin reaction has been employed for some time in Montreal among children. First the Von Pirquet method, then that of Mantoux and now the Patch Test have allowed and still permit of visualizing, in children, the intrusion of the tuberculous bacillus into the system and the appearance of allergic response. Among contacts this allows of discovering which should be radiographed, and among school children it facilitates control by indicating those who should be watched more closely.

The tuberculin reaction has, however, some defects. Some contagious diseases or temporary conditions of anergy, technical defects in its application, may, in given cases or during a certain period, falsify the results.

Already in use among children by antituberculosis institutions in clinics, hospitals and social organizations interested in young people, the Patch Test has been used for three years now by the Montreal Department of Health in its city clinics. Of 31,000 children who have undergone this test, 14 per cent have shown a positive reaction. Many have since been radiographed but the percentage of tuberculous children found by this means hardly reached 2 per 1,000; thus, this would be rather costly in practice. To my mind this method should be reserved for schools. Where a tuberculous contact might be suspected in children of preschool age with limited outside contact, the chance is that we will find a germ carrier in the immediate surroundings.

The B.C.G. campaign deserves very special mention. Debatable at first, the conditions under which this vaccine is now produced are now above reproach. Already 55,000 children from Montreal have received B.C.G. at birth. Some of them, in a germ-carrying family environment, have been revaccinated. The work already done represents a praiseworthy effort and its promoters and assistants who worked towards its realization deserve credit. The B.C.G. clinic, where a baby born of a tuberculous mother is kept until the allergic reaction appears, is another innovation which should not only be perpetuated but widened in its scope.

Faced with the ravages of the tubercle bacillus, doctors, animated by the spirit of real philanthropy—first among the English and then, about 1910, among the French—founded clinics for the detection and treatment of tuberculosis. We can never lavish enough praise upon the motives which imbued these originators. The institutions grew with the years, extended their field of action. Young doctors, anxious to aid in advancing the health of the public, grouped themselves around these pioneers. Today the Royal Edward and Bruchesi Institutes are recognized, appreciated. Maintained by provincial and municipal grants, assisted by private donations, they are the keystones of our organization in the fight against tuberculosis. Owing, however, to the disproportion between their financial needs and the work to be done, these institutions found themselves overburdened and unable to meet all the demands made upon them.

Moreover, there was no municipal centre to co-ordinate these efforts or to appraise the results obtained. Thus it was that in 1938 the Montreal Department of Health, wishing to give more effective aid to the campaign which had been undertaken, decided to create a Tuberculosis Section where all tuberculous cases would report and be classified. Some time later a radiological clinic was established for the use of the medical profession in the examination of contacts among their needy patients.

It had seemed to us that the first objective should be to secure from the medical profession in general the greatest possible amount of co-operation in order to work together towards the success of the antituberculosis fight, in the same manner as the previously existing institutions. As, however, we give no

treatment whatsoever, the tuberculous patients found by us, if in need of special hospital care, are, with the permission of the attending physician, placed in hospitals or referred to the Bruchesi or Royal Edward Institutes. If patients can be followed up by their own doctors, we become fellow-workers with private radiologists from whom the physician seeks advice for a patient able to meet the cost of X-ray examination.

Now obligatory by a provincial law, the examination of all teachers (religious as well as lay), begun towards the end of 1941 and ended in 1942, was an innovation long sought and needed. This radiographic examination has permitted the withdrawal from teaching of certain persons who were a source of danger to the children. Other teachers are obliged to remain under observation in order to stem the possible revival of fibrous tuberculous lesions which are now in a dormant state.

Since 1932 the Montreal Department of Health, in collaboration with the Catholic School Commission, has undertaken the clinical examination of teachers of both sexes during each scholastic year. This examination, insufficient from the point of view of pulmonary tuberculosis, was nevertheless a step in the right direction. I think that it contributed greatly to the adoption of the new law.

In June 1943 the Montreal Antituberculosis League was founded and the Department of Health collaborates closely with it. Thanks to the gift from the Provincial Health Department of one, and later two, 35-millimeter fluororadiographs, detection of cases in Montreal industries has taken on a new impetus. More than 45,000 films have been taken to date and the work will be intensified next year. In the Antituberculosis Institution during 1943 approximately 60,000 chest X-rays were taken.

Finally comes a problem the gravity of which borders on the tragic, that of providing hospital care for tuberculous patients, and family allowances when the breadwinner is obliged to rest temporarily. Pensions to needy mothers render some assistance but this is not enough to remedy the situation. Instead of moral support and plenty of nourishing food, both of which he needs, the tuberculous father finds himself and his family deprived of even the bare necessities which they need. Alas, even the welfare societies, in spite of all their goodwill, cannot meet this demand for food, as they are practically overwhelmed with appeals.

In the fight which has been undertaken we must mark time and no measurable progress will be made in spite of our labours until we have obtained sanatoria beds in number proportionate to the exigencies of our mortality rate. It is our urgent duty to say and repeat that no other part of the province is threatened to the degree obtaining in Montreal.

The Importance of Balance Between Vital Registration and Vital Statistics

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THE customary definition of vital statistics is "The collection, tabulation and interpretation of data concerning human natality, mortality, morbidity, marriage, and divorce." This definition came under fire in a recent informal discussion involving several State registrars. The question revolved around the issue of whether or not certain closely related statistical areas—in particular morbidity statistics and population estimates—were a part of the vital statistics domain.

From this discussion there emerged a new definition of vital statistics which is worthy of consideration. It is: "Vital statistics is the exploitation of vital records for statistical purposes."

Documents commonly conceded to be vital records are those of death, birth, stillbirth, adoption, legitimation, legal change of name, immigration, emigration, naturalization, marriage, annulment of marriage, and divorce. Many other public records on individuals are collected and officially maintained, such as those of social security, military service, electoral privileges, payments of pensions, rationing registration, rights to practise a profession, authority to drive a car or pilot a plane, and a host of others. While records such as these are of great value and should be coordinated with the vital records named above, they do not have the same basic social significance and consequently are not classified as vital records. Sometimes public records which are not vital records are used as substitutes for non-existent vital records. The use of old census enumeration schedules for proof of age and place of birth is a good example of this. Other illustrations are the use of family Bibles and baptismal records to serve as evidence for the creation of a delayed birth certificate. Neither can a delayed birth certificate be considered a vital record since it in turn merely serves as a substitute for a non-existent birth certificate.

If it is reasonable to define vital statistics as "an exploitation of vital records" in the above sense, it becomes apparent that morbidity statistics and population estimates are *not* vital statistics. They are closely linked to vital statistics but only as a near relative and not as a direct offspring.

Whatever disadvantage this new definition of vital statistics might have, it does have one merit—it brings into clear focus the true relationship between vital statistics and the records from which they arise. The closeness of this relationship has not been generally appreciated. At least two powerful sets of interests are involved: one set arising from the urgent needs of public health

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for statistics which will measure the extent of health problems and progress in public health programs; the other rooted in the necessity of protecting the rights and ensuring the privileges of the individual.

These two sets of interests are not necessarily in harmony. In many parts of the world the registration mechanism has been established without the development of statistical interests. For instance, throughout most of the South American nations well-entrenched civil registration mechanisms have functioned for decades with little or no statistics resulting from them. The principal purpose of these registration systems has been to record and preserve the facts of birth, death and marriage for their legal value. The rapidly growing health organizations throughout these countries now find themselves without the basic statistical data they need for their work. Without access to such data the health agencies in some of these nations are faced with the necessity of trying to satisfy their statistical needs through a civil registration mechanism not equipped to supply such service.

In view of the fact that the set of interests around registration have been much the stronger in most of the nations of the world, it is startling to realize how completely the improvement of vital statistics in the United States has resulted from interest in improving the statistics available for public health rather than from any interest in the use of vital records as legal documents. The principal exception to this has come about in the last few years. Large-scale registration needs have resulted from federal legislation linking social benefits to the necessity of proof of facts of birth, citizenship, and family relationships.

Some of the earliest attempts at registration arose from a desire to put records on file for legal use. They were not very successful. Some of the colonies took action at an early date to ensure registration of vital records: Virginia in 1632; Massachusetts Bay in 1639; Connecticut in 1644; and New Plymouth in 1646. It was not until 1842, however, that Massachusetts passed the first State registration law modern in type. In it vital statistics was made the foundation of modern sanitary progress. Shortly thereafter other States followed the example. The drive was on but it was primarily a drive conducted in the interests of obtaining better vital statistics.

Since the movement to improve vital statistics came from public health, it was but natural that the first attempt to obtain better vital statistics in the United States was through the enumeration technique rather than the exploitation of registration records for statistical purposes.

The United States had been the first country in the world to establish a regular system of census-taking as an organic portion of its system of government. However, at the time of the adoption of the Constitution the need for vital statistics as an essential part of the political knowledge and as the cornerstone of public health administration was completely unknown. Consequently as constitutional authority did not exist for the direct collection of information on births and deaths by the federal government, this authority was vested in the States.

A first attempt was made in 1850 to collect information on deaths as a

part of the 7th decennial census. It did not take long to discover that enumeration of deaths was an uncertain method for the determination of vital statistics. However, the method was tried thoroughly through five more censuses up to and including that of 1900.

In Volume III of the 12th Census of the United States (1900) there is an excellent résumé of the experience in the enumeration of death by census procedure.

"The data were obtained in part through the census enumerators and in part from the registration records of various states and cities. These two classes of returns do not possess the same value for statistical purposes, and their characteristics are explained below.

ENUMERATORS' RETURNS

"The enumerators made their return of deaths by inquiry of the families enumerated, and as this inquiry was not made until after the close of the year for which the deaths were to be reported it was inevitable that even with the most careful inquiry many deaths would be omitted. The failure of many enumerators to make any return of deaths upon the mortality schedule shows, also, that they frequently neglected to make the inquiry at all. This neglect of the enumerators to inquire concerning deaths, and the failure of families to report all deaths when the inquiry was made, have been experienced at all censuses where information was sought in this way, and in previous reports the deficiencies in the return of deaths by enumeration have always been pointed out and such cautionary statements made as were considered necessary to prevent improper use of the results obtained from this source. These precautions, however, were not always heeded, and misuse of the statistics based solely upon the returns of the enumerators has led to errors, which, if the data had been properly considered, would not have occurred."

REGISTRATION RECORDS

"The record of deaths obtained from registration sources supplied the only data presented in this report that are sufficiently complete for the preparation of reliable mortality statistics; nevertheless, it was far more complicated and less satisfactory in certain particulars than that secured through the enumerators. This is due to the fact that while the enumerators' returns were incomplete in a quantitative sense, they were all made in the same form and under the same instructions as to the facts to be reported and the distinctions to be observed, whereas the defects in the registration records were qualitative, occasioned by the fact that they were recorded under local laws and ordinances that differed materially as to the items of information required to be reported and were entirely silent concerning certain important distinctions necessary in order to make the data comparable with the census statistics of population."

That shows how it was recognized, away back at that time, that in spite of its being completely impossible to solve this problem of vital statistics by enumeration, it nevertheless had the tremendous advantage of being able to deal with systematic forms, methods and instructions that were the same, when you are taking them and trying to produce them from national statistics.

In view of the experimental results testing the relative merits of enumeration and registration for collection of vital statistics, there was no longer any room for doubt in the minds of all those who were devoted to the cause of improving vital statistics that the solution of the problem lay in the improvement of State registration procedures.

A change of emphasis was written into the basic program of the Bureau of the Census. To quote from the United States Mortality Volume 1900-1904:

"The great desirability of uniformity in the laws, systems, and methods regulating the collection and tabulation of mortality data has long been recognized by all persons who have

attempted to make original compilations of the returns from different places or to extract comparable figures from the various statistics published, and frequent efforts have been made to bring about a more satisfactory condition in this respect. Success, however, depends on many things besides a general sentiment in favor of improvement. It requires a vast amount of time and hard, persistent work, such as can be supplied effectually only by a permanent office or bureau which has a paramount interest in the general—as distinguished from the local—results, and is able to act as the agent of the various interests in determining proper procedure, forms, and methods, in publishing the necessary documents and distributing them to all parties whose approval and cooperation are necessary; and in keeping all of the machinery in perfect order after it is put in operation.

"The establishment of the Bureau of the Census upon a permanent basis supplied the means by which progress in this direction could be made, and a definite plan for the extension and improvement of registration methods and results was formulated, to be carried out in cooperation with the authorized representatives of the principal organizations interested."

The United States attempt and failure to solve the problems of obtaining good vital statistics by enumeration techniques have been dwelt on in detail because it teaches a lesson which should not be lost sight of; i.e., that satisfactory vital statistics is dependent upon satisfactory vital registration. The reverse is not necessarily so. The legal use of registered documents is not predicated upon the yield of satisfactory vital statistics. A healthy system of vital records can be maintained without any consideration whatsoever for the statistical by-products of vital records—one quite satisfactory from the viewpoint of the user of vital records as documents.

This fact then: *that good vital statistics is wholly dependent on satisfactory vital registration procedure*—is an all-important thing for us to realize. It leaves the vital statistician two courses to follow: either he mans the bridge and charts the course to be sailed by the registration ship or he follows in her trail and picks up what statistical scraps he can. He can not be captain of the ship without being vitally interested in registration problems and their solution because the human interest in the proper use of vital records is of great strength. It is interlinked with such forces as the mother's love of her child, the revolt against stigmatizing a child by branding it illegitimate, the inheritance of property and pensions and the like. Forces such as these cannot be gainsaid. Unless they are guided by a clear mind and a steady hand they will destroy much of the statistical advantages painfully achieved over a period of years.

The principal difficulty in the development of a healthy coordination between vital records and vital statistics is the maintenance of a proper balance between registration and vital statistics interests. Not long ago a registrar told me that he hoped the State Department of Health would take over his statistical duties. "All the things worth while doing involve registration matters," he said.

To be sure, the difficulties arising from registration problems are overwhelming in their range and volume. One can scarcely blame a registrar for such an attitude. But it is my opinion that a balance between the statistical and registration interests must be restored or irreparable harm will be done to the cause of both vital records and vital statistics.

No one organization can do so much to improve the completeness and quality of birth and death registration as the far-flung network of State and

local county health units. Why should they be concerned about registration matters if they do not receive the statistics which they need? As one State health officer remarked to me somewhat plaintively, "I really do not know why I should worry so much about what happens to these records any more. They cost me four times as much in money and worry, in spite of which I get none of the facts I used to receive."

You are fortunate here in Canada because you have in Mr. Marshall a leader who does have balance in his vital statistics and vital registration interests. In all the years I have known him he has always maintained an even keel and never once emphasized one side or the other.

Some of you, as provincial registrars, have been made of weaker clay, as have I. At times we have strayed from the narrow path of even balance between registration and vital statistics.

There is little doubt that the payoff is in the maintenance of a balance between the two. Both sets of interests are vitally important. Both are tremendously powerful.

The idealistic American life of fifty years ago has changed. We might give a sigh of regret that this is so but the change cannot be denied. As people come into closer contact in crowded communities, vital records are of increasing importance to protect the rights and insure the privileges of the individual—the right to enter school, to obtain permits, to secure drivers' licenses, to marry, to vote, to enlist, to enter civil service and to qualify for social security benefits or pensions. In a multitude of ways the State is entering into the daily life of people and requiring records of births, marriages and deaths for the interest of the individual. Registration has come into its own.

The interests of registration and statistics are compatible. It only needs leadership and intelligent planning to develop them into a harmonious and balanced pattern, which will bring added strength to both subjects. The drafting of such a plan is now being attempted in the United States as a cooperative endeavour between the State registrars, the Bureau of the Census and others concerned. A first draft of a plan for the coordination of vital records and vital statistics has been submitted to the States by the Bureau of the Census as a basis for exploration and discussion. With all of us working together we have bright hopes that out of these explorations and discussions will emerge a sound workable plan that will meet the requirements of all concerned. The registrars of the United States are now organizing a representative committee of registrars which will undertake the solution of the problems involved in the coordination of vital records and vital statistics.

As pointed out in the first draft of the Plan, the most important problems revolve around: Strengthening administrative and technical personnel responsible for local and State registration; obtaining complete and accurate registration; protecting the integrity of registered documents; solving the problem of "corrections"; protecting the illegitimate, legitimized or adopted child against social stigma arising from the misuse of birth certificates; improving certification procedures in the interest of efficiency; developing a mechanism for establishing the fact of death promptly for those official and private agencies needing such service; and the overhauling of statistical procedures so as

to fill the various needs for vital statistics more adequately and at the same time minimize the duplication between State and federal statistical methods.

Probably nothing is more important in the maintenance of balance between vital registration and vital statistics than to keep in mind, constantly, a simple clear-cut statement of the objectives to be achieved by the vital registration-statistics system. Let us pause and review the objectives suggested in the development of the plan:

1. To attain completeness, accuracy and timeliness in the registration of vital records and the production of vital statistics from them.
2. To obtain as much uniformity in definitions, certificates and practices as is necessary to satisfy national and inter-State needs and at the same time to avoid sacrificing the very real benefits arising from deviation in methods between the States for those requirements which come from differences of a local nature.
3. To protect the adopted and illegitimate child from social stigma arising from improper disclosure of records.
4. To develop efficient registration services to the public.
5. To develop a balanced statistical program integrated with the various registration processes sufficient to satisfy: (a) local, State and national needs; (b) public health, demographic, business and industry, and other more specialized interests; (c) current, annual, and time trend requirements; and (d) special studies and analyses for special purposes.
6. To develop and maintain active cooperative research on methodology aimed at improving the system both from registration and statistical viewpoint and at the same time eliminating unnecessary duplication of effort and expense between State and federal vital statistics practices.
7. To develop rules, regulations and laws which will implement these objectives in accordance to the plan which is finally agreed upon.

These objectives are not new. All of us have stated them as a part of our beliefs at one time or another. The thought that impresses one upon considering the objectives is our tendency to concentrate from time to time on one goal to the exclusion of others. In the early days it was completeness of registration. More recently it has been improvement of registration service to the public. Within the last year or two a storm of protest concerning the handling of the records for adoptions and legitimations has engrossed much of our attention. Just ahead lie the many problems involved with dependents' allotments for members of the armed services. It looks like slim rations for the vital statistics requirements of the country, both locally and nationally, unless we can maintain a better balance in our interests in the future than we have in the past. We will regret it if we do not. Vital statistics are essential. If we do not nurture their continued growth, others will do what we fail to do. In that case public health or social statistics will probably absorb vital statistics.

Such solutions might well involve the severing of vital statistics from the registration service. On the other hand, if we do maintain a reasonable balance in our dichotomy of interests and if we put up a determined struggle to maintain and further develop the efficiency of our statistical services, in spite of the overwhelming public demands for registration service, it is my belief that the ultimate achievement in our chosen subject field will be hailed as an outstanding example of public service in the needs of the people, their organizations and their government.

Reduction in the Number of Mongolian Defectives—A Result of Family Limitation

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SINCE mongolian defect appears to a far more marked degree in the children born to older mothers than in those born to younger mothers, and since there is today a tendency for women to have fewer children towards the end of the period of bearing, the proportion of mongolian defectives must be falling. This reduction, important in itself, would, from the results of Penrose (1939), be associated with a reduction of other developmental abnormalities (those of the foetal nervous system and central placenta praevia, in particular).



FIGURE 1*

The relative probability that a birth will be that of a mongol.

In Ontario, data are available to illustrate the foregoing anticipations. There is, first at the Ontario Hospital, Orillia, a considerable group of mongolian defectives on whom Mr. H. Goodfellow kindly furnished data (summarized in Table I), as of May 30, 1944; he classified the patients by age, and by age of their mothers at delivery. From these data, the relative probability that a birth is that of a mongolian defective may be computed. The calculation consists of adjusting the number in each class of mongols with regard to the number of women who were the same age as their mother at the time of their birth, and the fertility of those women; then the results may be tabled by age of mother, as is discussed in detail in an appendix. The results must be found separately for the sexes, as shown in Table II. It can be seen, however, that the change in the probability of mongolism is essentially the same for the two sexes (except for the unreliable case of mothers below 20, of whom there were

*This and the following figure are due to Mr. J. A. McClure of the Division of Psychiatric Research.

only 3) so that the results for the two sexes were combined, by finding the geometric mean. The result is shown in Figure I.

The foregoing results on the relative probability of mongolism, as related to the mother's age, were combined with the data, recently brought together by the writers (1944) on numbers of women, by age, in Ontario, and the probability of a woman of given age having a child, to calculate the relative number of mongols born during the last two decades. Similarly the numbers to be expected for some years to come were obtained from estimates of the future population of Ontario. The term "relative" should be emphasized, because the previous results of Table II and Figure I only show whether the probability

TABLE I

MONGOLIAN DEFECTIVES IN THE ONTARIO HOSPITAL AT ORILLIA BY AGE (ON MAY 30, 1944) TO NEAREST BIRTHDAY, AND AGE, AT LAST BIRTHDAY, OF MOTHERS AT DELIVERY

MALE MONGOLS

Mothers	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	Total
15-19						1				1
20-24			2	2	1					5
25-29			3	4	1	3	1			12
30-34	1		4	1	1					7
35-39		2	6	2	4		2	2	1	19
40-44	2	4	3	1	3	2				15
45-49			4	1	1					6
Total	3	6	22	11	11	6	3	2	1	65

FEMALE MONGOLS

Mothers	0-4	5-9	10-14	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	Total
15-19				1		1						2
20-24	1			1	1	1						4
25-29		1	2	3		1						7
30-34			1		1	1	2	2				7
35-39		1	1	4	3	2	1					12
40-44	2			6	5	3		1			1	18
45-49		1	1		2		2	1				7
Total	3	3	5	15	12	9	5	4	0	0	1	57

TABLE II

THE RELATIVE PROBABILITY THAT A BIRTH WILL BE THAT OF A MONGOLIAN DEFECTIVE

Mothers' Age	Male Birth	Female Birth	Geometric Mean
15-19	.37	10.24	1.94
20-24	1.08	.87	.97
25-29	2.46	1.53	1.94
30-34	2.31	1.64	1.95
35-39	8.70	5.77	7.08
40-44	28.23	22.32	24.65
45-49	53.80	49.72	51.72

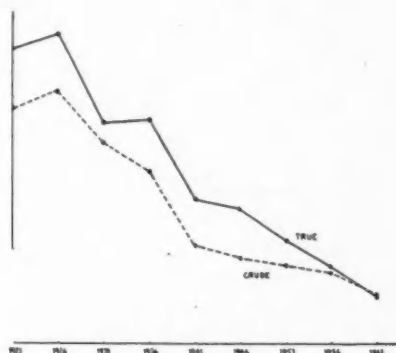


FIGURE II

The relative proportion of mongols to all children born, with the passage of time.

of a delivery at a given age being that of a mongol, will be high or low, but not the absolute probability—since we do not know the number of mongols for whom admission to the Ontario Hospitals is not sought. The relative numbers of mongolian births in the past and to be expected in the future are shown in Table III. It will be appreciated that a very considerable reduction from 109.2 to 85.7, or 22 per cent, must have taken place. In the next 20 years a further reduction from 85.7 to 61.1, or another 29 per cent, should take place.

It should be pointed out that the reduction in number of mongolian births is due to some extent to a moderate reduction anticipated in the number of all births. The influence of that trend may be eliminated by calculating the percentage of all births that will be mongolian. Values so calculated are shown in the second line of Table III as the crude (observed) proportion of mongolian births. This crude value is based on the number of women of each age, the probability of their bearing children, and the probability of the children being mongols. This value is, however, crude in the sense that the true biological situation is modified by the first factor (the number of women of each age)

TABLE III
MONGOLISM IN ONTARIO (RELATIVE FIGURES)

The number of mongolian births								
1921	1926	1931	1936	1941	1946	1951	1956	1961
109.2	102.1	97.5	83.9	85.7	77.2	72.5	66.7	61.1

The crude (observed) proportion of mongolian births								
3.76	3.85	3.59	3.42	3.02	2.97	2.93	2.89	2.78

The true proportion of mongolian births								
4.09	4.14	3.69	3.70	3.28	3.22	3.05	2.91	2.76

which is a compound of the historical phenomena of migration, changing birth-rates, and changing death-rates in the past. The true probability, with the elimination of these historical factors, is, in many ways, more significant. This true probability is calculated, for a given instant, from the consideration of female survival rates, fecundity rates, and rates of mongol incidence. For the future, as for the past, crude and true probabilities have been calculated at 5-year intervals and are shown in Table III and Figure II. The crude (observed) probability of mongolism in the population has been falling for at least two decades, and that fall will be continued for at least two more decades (from 1941). The true probability is declining even more rapidly.

The foregoing work illustrates the importance of considering the general structure of a population when studies are made of the absolute incidence of mongolism, as in the studies by Jenkins (1933), Malpas (1937) and Penrose (1937). Apparent discrepancies in such work might be resolved by the consideration of birth rate by age of mother and of population structure.

It should be noted that we have considered the incidence of mongolism at birth. If that may be expected to decrease until at least 1961, then the incidence in the population may be expected to decrease until at least 1970.

APPENDIX

THE PROBABILITY THAT A BIRTH IS THAT OF A MONGOL

THE probability that a birth is that of a mongol is related to no known factor except the age of the mother at delivery (Penrose, 1934). It is required to determine that relation from the data on mongolian defectives in the Ontario Hospital at Orillia as of May 30, 1944. It should be noted that this hospital houses all the young defectives under the care of the Ontario Hospitals, although some of the older are in other hospitals. The data are summarized in Table I.

The relationship between the age of mothers and number of their mongolian issue is complicated by several factors, which may, however, be unravelled. With regard to male mongols, we may suppose that the number, born t years (the counting is backward) before 1944, of mothers m years old, to be expected at Orillia is

$$x_{mt} = f_1(m)f_2(t)N_{m3}Q_{mt} \dots \dots \dots (1)$$

where N_{m3} is the number of women m years old at the census of 1941 and Q_{mt} is the probability that a woman of m years bore a son t years ago. The first function, $f_1(m)$, is the probability that a male born of a mother m years old is a mongol and is the prime object of our research. The second function is more involved but may be broken down as

$$f_2(t) = N_{mt}S_tP_t/N_{m3} \dots \dots \dots (2)$$

where

$$*N_{mt} = N_{m2}f_3(t) \dots \dots \dots (3)$$

represents the number of women m years old t years ago, and

$$S_t = f_4(t) \dots \dots \dots (4)$$

is the probability that a male mongol is alive t years after his birth, and

$$P_t = f_5(t) \dots \dots \dots (5)$$

is the probability that a male mongol, alive at the moment of the count, is at Orillia.

*We can hardly work from the census returns generally, because the immigration of young women to Ontario has been considerable in recent decades, and so a large and unknown number of the women who might have contributed mongols in 1944 were outside the province in, say, 1911.

Actually our data are given, necessarily, at intervals (of a year), i.e., let

$$y_{mt} = \int_m^{m+1} \int_{t-.5}^{t+.5} x_{mt} \, dt \, dm$$

$$= N_{m3} Q_{mt} \int_m^{m+1} f_1(m) \, dm \int_{t-.5}^{t+.5} f_2(t) \, dt, \dots \dots \dots (6)$$

with the slight but practical restriction that N_{mt} and Q_{mt} vary abruptly at m and $m + 1$ or at $t \pm .5$, but are uniform within those limits. It should be appreciated that y_{mt} is the product of two independent functions, in m and t , if N_{m3} and Q_{mt} can be estimated independent of the present data (as from the general data of vital statistics).

The estimates necessary for the present work may be made by substituting empirical values in

$$z_{mt} = y_{mt} / N_{m3} Q_{mt} \dots \dots \dots (7)$$

on the right, and then finding

$$z_m = \sum_{t=.5}^{\infty} z_{mt}$$

$$= k \int_m^{m+1} f_1(m) \, dm \dots \dots \dots (8)$$

from (6) and (7) and where

$$k = \int_0^{\infty} f_2(t) \, dt \dots \dots \dots (9)$$

is a constant not to be estimated from the present data.

The function for male mongols shown in Table II was calculated on the lines indicated, with the further modification of summing the estimates of z_m for 5-year periods (of life). A similar calculation was made for females. It should be realized that the values are only relative, since for each sex they contain an unknown factor k , peculiar to the sex. The general shape of the relation is very similar for male and female mongols, except, of course, in the case of the first group which does not give reliable results since, from Table I, there are only 3 mothers, altogether, of an age below 20. In view of this similarity of the relation for the sexes, we may suppose it the same and find the geometric mean for each maternal age. Then it will be seen that the probability of mongolism rises rapidly towards the end of the period of bearing. There is also an unreliable increase in the probability for mothers below 20, and a plateau from 25 to 34 which has not been generally reported.

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THE DEPARTMENT OF NATIONAL HEALTH AND WELFARE

FOLLOWING the establishing of three new departments in the Federal Government—National Health and Welfare, Veterans' Affairs, and Reconstruction—the functions of the Department of Pensions and National Health were assigned to two of these departments. The Honourable Ian Mackenzie, formerly Minister of Pensions and National Health, was appointed Minister of Veterans' Affairs; and Dr. R. E. Wodehouse, formerly Deputy Minister, was appointed a member of the Canadian Pension Commission in the Department of Veterans' Affairs, and liaison officer between that department and the Department of National Health and Welfare.

The duties and powers of the new department include "all matters relating to the promotion or preservation of the health, social security and social welfare of the people of Canada over which the Parliament of Canada has jurisdiction." This is truly a great charter, reflecting the recognition by the government of the interrelation and interdependence of the two vital fields of health and welfare.

The Honourable Brooke Claxton, Minister of the new department, is an experienced Parliamentarian and deeply interested in health and welfare. After outstanding service overseas in the last war, for which he received the Distinguished Conduct Medal, he resumed his education at McGill University. Upon his graduation with honours in 1921, he practised law and in 1939 was appointed a K.C. He is an associate professor of commercial law at McGill University. In 1940 he was elected to Parliament as member for the Montreal constituency of St. Lawrence—St. George, and in 1943 was appointed Parliamentary Assistant to the President of the Privy Council. Mr. Claxton has had extensive experience in international affairs, having served as a Canadian delegate to the British Conference on Commonwealth Relations in 1935, 1939 and 1941, and to the Institute of Pacific Relations in 1942. He represented Canada at the first session of the Council of the United Nations Relief and Rehabilitation Administration in 1943 and participated in the sessions held in Montreal last September. He was a government delegate at the International Labour Conference in Philadelphia in April 1944.

On the occasion of the 1944 annual meeting of the Canadian Public Health Association, which was held shortly after his appointment as Minister, Mr.

Claxton outlined the work of his department as he saw it, and expressed the hope of having the cooperation of all voluntary agencies in developing a health program for Canada. Mr. Claxton has already met the officers of various national health agencies and professional societies and has established a relationship which should achieve effective teamwork not only between these agencies and the government but also among the agencies themselves.

The new Deputy Minister of Health is Major-General G. Brock Chisholm, C.B.E., M.C., E.D., M.D., formerly Director General of Medical Services for the Canadian Army. General Chisholm served in the First World War with the 48th Highlanders, winning his commission in 1917. On his return to Canada he studied medicine at the University of Toronto, and after an internship in London, England, with a special interest in psychological medicine, he practised for a number of years in Oakville, Ontario. Subsequently he joined the staff of the Institute of Human Relations at Yale University, and later went back to England to study at the Queen's Square Neurological Hospital and the Institute of Psychological Medicine. Returning to Toronto in 1934, he engaged in the practice of psychiatry. After the outbreak of the present war, General Chisholm served as Commandant of the northern area of M.D. 2 with headquarters at North Bay, and in June 1941 went to Ottawa as General Staff Officer. In September 1941 he set up the personnel selection organization of which he was named director. In May 1942 he was appointed Deputy Adjutant-General and in the following September he became Director General of Medical Services. Subsequently he was honoured by the King, being made a Commander of the British Empire.

George F. Davidson, M.A., Ph.D., the new Deputy Minister of Welfare, has had extensive experience in both public and private welfare. After a brilliant record at the University of British Columbia, followed by scholarships at Harvard University Graduate School, he completed a high-school teachers' training-course at the University of British Columbia. Instead of teaching, however, he joined the staff of the Provincial Secretary's department, to assist in the rapidly developing welfare program of the province, and became Superintendent of Welfare and of Neglected Children. At the end of 1935, he became Executive Director of the Vancouver Council of Social Agencies and the Vancouver Welfare Federation. In 1939 he was recalled to the Government Service to succeed Dr. H. M. Cassidy as Director of Social Welfare for the Province. In 1940-41 the Government of British Columbia released him on loan to the Dominion Government in order that he might prepare for the reception and placement of overseas children in Canada. In April 1942 he resigned from the provincial service to become Executive Director of the Canadian Welfare Council at Ottawa.

It is significant that in Great Britain, in the midst of the war, there have been presented both the report of Sir William Beveridge and the Governmental White Paper outlining plans for social security, which include adequate medical, dental, nursing and hospital services. In Canada, the Special Committee on

Social Security of the House of Commons is giving consideration to similar plans, and already the provision of family allowances has received the unanimous endorsement of Parliament. The new Department of National Health and Welfare, with its direction from Parliament to "promote or preserve the health, social security and social welfare of the people of Canada", has not only a great responsibility, but also a great opportunity.

THE SELECTION OF PUBLIC HEALTH PERSONNEL

IT has long been the hope of administrative health officers in Canada that it might be possible to develop procedures which will ensure that positions in public health work will be filled by those best qualified for them. The system followed by the Civil Service Commission of Canada in making appointments to the Federal Government service suggests one method of dealing with the problem. When appointments are to be made, Dominion-wide publicity is given to them through the press and other channels, and the qualifications desired are clearly set forth. In this way both the Government and the applicants benefit. The use of examinations for certain personnel also forms a commendable part of the Commission's system of personnel selection. Like its counterpart in the United States and other countries, the Civil Service Commission has established a reputation for thoroughness and fairness. In contrast, the experience in both Canada and the United States has been that the effectiveness of civil-service administration on a Provincial or State level tends to vary greatly when measured from the standpoint of the basic criterion of placing the right person in the right job. Too often, political influence is dominant and patronage rules. As effective health administration is dependent upon the stability of the health officer's position, it is important that political influence and patronage be not allowed to interfere either with his appointment to the position or with the execution of his duties. Fortunately, in the majority of provinces the local health officers can be removed from office only with the consent of the provincial authority on just cause being shown. As a result, there are, in Canada, relatively few changes from year to year among health officials serving in the Provincial and Federal departments. In the United States, however, changes occasioned by State or municipal elections are frequently followed by a change of health-department officers. Because of the failure of existing measures to ensure the appointment of properly qualified persons to fill the ever-increasing number of public health positions, leaders in the United States have given much thought to the development of a more efficient system.

While examinations cannot provide an adequate appraisal of the personality of the candidate, they do constitute the fairest method for assessing knowledge of technical and other procedures, and for revealing aspects of the personality which otherwise would not be detected. The preparation of examination papers is recognised by experienced teachers as a difficult and exacting task. Too often, in Provincial and State departments where examinations for public health appointments have been conducted, the health officer or the director of

public health nursing has compiled questions hastily, repeating questions of previous examinations and failing to cover the subject adequately. Such an examination may be entirely unfair, and promising candidates may be lost to the department. Those who studied the problem realized that the content and quality of the examination papers varied greatly, and were convinced that until examination papers were properly prepared gross unfairness to the candidates would continue. How could this be corrected? Health officers and other administrators are not specialists in setting examinations. It was appreciated that if the authorities conducting examinations could be supplied with appropriate questions, a selection could be made which would form an adequate examination. It was agreed that those conducting the work in the field, and administrative officers and others qualified, should suggest the questions and that they would then be prepared by a group of persons with broad experience in setting examinations.

With the 1939 Amendment to the Federal Social Security Act, the U.S. Children's Bureau and the U.S. Public Health Service were empowered to require States to provide for the "establishment and maintenance of personnel standards on a merit basis" in connection with programs of a public health nature for which the Bureau and the Service administer Federal funds. One of the criteria of the Merit System is that personnel must be selected competitively on the basis of examinations.

In the preparation of examination material to be used by the States for the selection of public health personnel, the Children's Bureau and the Public Health Service sought the assistance of the American Public Health Association. The story of what has already been accomplished is presented in this issue in an article by Dr. Reginald M. Atwater, Executive Secretary of the Association, and Dr. Lillian D. Long. Thus far, examinations have been developed in administrative public health, public health nursing, laboratory work, and environmental sanitation. Since July 1942 a total of 104 examinations have been held in 19 States. An analysis of the results to date shows that the examinations have had a high degree of reliability. The Merit System Unit hopes ultimately to correlate the results of the various examinations with the subsequent performance of the candidates appointed.

Public health administrators in Canada will follow with interest the work of the American Public Health Association in furthering the merit system through the preparation of suitable examination questions. The Canadian Public Health Association desires to give every assistance to this movement and appreciates representation on the sub-committee which is directing the program.

Nutrition

THE MILK-IN-SCHOOLS SCHEME IN NEW ZEALAND

THE distribution of milk in the schools of New Zealand was introduced on March 1, 1937, with the object of making available to all school children in the Dominion a $\frac{1}{2}$ -pint ration of milk on each school day. The ideal aimed at is to provide pasteurized milk in keeping with the regulations of the Department of Health—namely, holding the milk for 30 minutes at 145-147° F. and cooling it to at least 50° F. The milk is supplied in bottles which have been sterilized either by the use of mechanical bottle-washing machines or by the use of steam sterilization in a cabinet after the bottles have been washed by hand. A straw is provided with a view to encouraging the quiet assimilation of the milk. All types of schools are invited to participate—State, primary, technical, high and native, as well as denominational and other private schools and kindergartens. By March 1943 the scheme had progressed to a point where the milk was available to 234,000 of the total school-child population of 282,000, or approximately 84 per cent. It has been found in practice that approximately 75 per cent of these children to whom milk is available accept the daily ration. The milk is provided free of all cost to the children, and acceptance of the milk by the child is entirely voluntary.

When the Government decided to institute the scheme, the staff of the Department of Health was strengthened by the appointment of an officer, designated the Milk Scheme Officer, who had special experience in milk distribution and was fully conversant with costs and conditions in the dairy trade.

The general procedure in inaugurating the scheme in any area is as follows:

1. Local committees are formed of representatives of local bodies, chari-

table organizations and those interested in the welfare of the children, and representatives of teachers' associations. To the local committee are co-opted representatives of the departments of Education, Agriculture, and Health, the idea being that these officers have invaluable knowledge about schools, sources of supply and prospective contractors.

2. It is the duty of the Milk Scheme Officer to assist local committees, particularly in interesting the right type of contractor. It is his duty to advise prospective tenderers of the capacity of plant which they will require; assist them, if necessary, to arrive at their costs; and advise them on lay-out of plant, the number of children and the schools to be supplied, and mileages it will be necessary for the contractor to cover in distributing milk.

3. When the tender and conditions are finalised, the Milk Scheme Officer prepares a memorandum setting out costs, area covered, and children and schools to whom the milk will be available if the tender is approved.

4. When the tender is accepted, the successful tenderer is notified, usually through the local committee, that he can proceed with the erection of buildings, installation of plant, purchasing of bottles, crates, etc. He is also informed that he must not begin to supply milk until such time as the medical officer of health for the district has signified his approval of the contractor's methods of handling, treatment and distribution. The contractor, when tendering, provides a list of producers from whom he proposes to purchase his milk, and a check is made by the local representative of the Department of Agriculture to ascertain if the proposed suppliers have the necessary facilities in their milking sheds to assist them in producing milk of the standard required by the Department of Health.

5. As soon as possible, a contract is prepared and signed by the contractor and by the Minister of Health. A standard form of contract is adopted. Contracts are made for varying periods up to three years.

A clause in the contract gives the contractor or the Government the right to apply for an adjustment of the price per gallon to be paid at any time.

The price to the producer is arrived at as follows. During the summer period of approximately six months, the guaranteed price for cheese is taken as a basis. To this is added compensation for loss of by-products and the extra cost incurred in providing extra facilities required in the milking shed of the city supply type as against that of the butter- or cheese-factory supply type. In the autumn a slight increase is paid to meet the added cost incurred in partial hand-feeding of cows; and during the winter period of four months a further increase in price is given to cover the additional costs incurred in feeding. The following are three sets of prices per gallon to producers operating in Wellington and Auckland.

	Wellington	Auckland
Summer..	10.139d.	9.0d.
Autumn..	10.639d.	10.25d.
Winter...	13.6d.	14.25d.

A wider range of prices per gallon operates in the cost of collection, treatment and distribution. In some instances the treatment and bottling plant is operated for the Milk in Schools Scheme only; other plants are being used for a town supply also. Some contracts involve many miles in delivery.

As it will not be practicable to extend the bottled milk supply to every district in the Dominion owing to areas of isolation and scattered school population presenting insuperable difficulties, the following alternative schemes are made available: (1) free issue of milk for cocoa-making purpose; (2) free issue of whole or malted milk powder.

In connection with the malted milk

powder, successful experiments have been made by co-operation between one of the medical officers of health and the New Zealand Dairy Company, with the result that while the proprietary brands of malted milk powder contain approximately 30 per cent of dried milk or milk powder, the powder being used in connection with the Government's Milk in Schools Scheme contains approximately 80 per cent of dried milk or milk powder, and the Acting Dominion Analyst reports that 1½ lbs. of the powder mixed with 7—7½ pints of water will produce a mixture equivalent to whole milk.

The "milk for cocoa" scheme has been used to supply a warm drink for the school children during the winter months.

Quite apart from the obvious health advantages accruing to the children supplied, there are other important advantages to all sections associated with the scheme. Producers, for instance, have not only benefited from the cash and higher payments made for school milk as against the alternative prices they would receive for milk supplied to butter and cheese factories, but it has been found that the scheme has been particularly beneficial in that it has served as an outlet for the surplus milk which in the past has had to be placed on markets in the main centres at cut prices which have been ruinous to distributors and producers. The Milk in Schools Scheme has tended to stabilize prices to the producer, and, owing to the improved processing machinery that it has introduced, the public as a whole has secured milk of a higher quality. It was thought by the milk-vending trade that the institution of the scheme would mean that retail sales to the public would decrease. This, however, has not been the case, and it appears that as a result of having acquired the habit of drinking milk on school days the children purchase it from the vendors or the milk bars when school is not in session. The cost of the scheme is in the vicinity of £160,000 per annum.

News

Interprovincial Conference on Health and Welfare

SEEKING a uniform approach to health and welfare problems, representatives of seven Provinces attended a conference which was convened in Toronto during the week of January 8th by the Honourable R. P. Vivian, Minister of Health and Welfare for the Province of Ontario. Among the subjects discussed were tuberculosis and venereal-disease control, mental hygiene, sanitation, food and drug legislation, old-age pensions, public assistance, child care, and mothers' allowances. The Provinces represented were: Alberta, Saskatchewan, Manitoba, Ontario, Quebec, New Brunswick, and Nova Scotia.

The conference agreed to close co-operation between the Provinces in dealing with venereal disease among civilians, and also decided that discharged members of the armed forces suffering from venereal disease were primarily a Federal responsibility and that the full cost of their medical care should be assumed by the Dominion. It was felt, too, that the Federal Government should be responsible for veterans who acquired venereal disease within one year after their discharge from the services, as well as those who acquired it while in the service or were suffering from it on enlistment. If medical care for a veteran is provided in a Federal institution, it was agreed that the Provinces should be in no way responsible for the administration of this care. If the medical care is provided by an agency other than a Federal institution, the Province to which the veteran returns on his discharge from the services should pay the costs and later receive reimbursement from the Dominion. It was also proposed that the Dominion and the Provinces should establish a schedule of fees for venereal-disease treatment for veterans.

The recommendations of the conference, which will be submitted to the Governments of the Provinces represented, also dealt with reciprocal arrangements concerning non-residents requiring treatment for tuberculosis, mental illness, and cancer. A further reduction in the price of penicillin was urged, to permit a wider use of this drug in the treatment of venereal and other diseases.

It was agreed that, as a preventive measure against typhoid fever, all cheese not made from pasteurized milk should be held in storage for ninety days before being placed on the market. Another recommendation adopted provided that all Provinces will control, as quickly as possible, the infestation of whitefish within their boundaries and will adopt standards which will be uniform for fish used for export and domestic markets.

In the field of public welfare, the conference agreed that uniformity was essential in methods of computing income allowed to recipients of old-age pensions, pensions for the blind, and mothers' allowances. The members were in agreement also that bonuses or medical services given to old-age pensioners constituted tacit acknowledgment that the pensions were insufficient and that this question should be referred to a Dominion-Provincial conference.

Free Health Service Plan in Saskatchewan

SASKATCHEWAN's recently expanded health and welfare services will include provisions for free treatment for those suffering from poliomyelitis, cancer, venereal diseases, and mental illness, it has been announced by the Honourable O. W. Valkau, Minister of Social Welfare and Acting Minister of Health. The objective is to provide both an adequate standard of living and adequate medical care for those who, because of mental or physical handicaps, are unable to make such provision for themselves. In the social welfare field the Province is now providing free medical services and hospitalization for recipients of old-age pensions and mothers' allowances, blind pensioners, and wards of the Children's Aid Society. The Department of Social Welfare authorizes medical care in these cases and it is supervised by the Department of Public Health. When medical care or hospitalization is a matter of emergency, it is available immediately, and the details are straightened out afterwards. A telephone call or a telegram to the Welfare Department is all that is necessary in an urgent case, and the patient retains his right of choice of physician and hospital.

A major innovation in Saskatchewan's welfare services has been the establishing of a field-service staff which is responsible for looking after cases of need in the Province. This has eliminated all possibility that a case may be neglected while the question of responsibility is being debated by different branches within the department. Every field worker is responsible for every social-welfare case inside his territory, regardless of category.

Uniform standards of social aid provided by municipalities have also been established, and are based on the highest standard which existed in the Province previously. The Province shares in the cost. In unorganized territories the whole financial responsibility is assumed by the Government and the standards there are as high as elsewhere.

Another recent change has been to place industrial schools for delinquents and institutions for aged persons within the jurisdiction of the Department of Social Welfare. Previously, old people's homes were operated by the Department of Public Works, while industrial schools were under both the Department of Education and the Department of Public Works.

Health services in the Province will ultimately be directed by a Health Planning Board. The Board has been authorized by the Legislature and is now planning its program.

The Merit Unit System Completes One Hundred Examinations

THE Merit System Unit of the American Public Health Association, with offices at 1790 Broadway, New York, has announced that it has prepared over one hundred examinations for the selection of public health personnel in nineteen States. Since the initiation of this program three years ago by the Association, nearly ten thousand individual questions, or "items", have been developed by the staff of the Unit in the fields of public health nursing, laboratory work, administrative public health, and environmental sanitation. An outstanding feature of the program has been the active support which it has received from public health workers themselves. More than three hundred persons engaged in the four public health fields in which examination material is

being developed have contributed to the work of the Unit by serving as item constructors and reviewers. It is to no small extent the result of their realistic point of view that the examinations have been accepted where they have been used as fair and sound instruments for selecting qualified personnel.

Dr. George H. Ramsey, Chairman of the Sub-Committee on Merit Systems, presided recently at a round-table conference in New York City which was attended by forty persons representing state health departments, state civil service and merit system agencies, universities, the U.S. Public Health Service and the U.S. Children's Bureau. Summaries of the discussion are available and may be obtained by addressing Lillian D. Long, Ph.D., Merit System Unit, 1790 Broadway, New York 19, N.Y.

Brantford Maintains its Record

DR. W. L. HUTTON, D.P.H., Medical Officer of Health for Brantford, Ontario, announced recently that the city had completed the fourteenth consecutive year in which there was not a case of diphtheria.

Personals

DR. DEW. S. PUFFER, D.P.H., Medical Officer of Health for Kingston, Ontario, has been on loan to the Department of Health of Ontario, to assist in that department.

DR. GORDON STRUTHERS, D.P.H., who for many years was in medical work in China and who during the past year has been serving in the R.C.N.V.R. as Surgeon Lieutenant Commander, has been appointed to the Department of Health of Ontario in connection with the development of the program of full-time health services in that Province.

DR. A. E. BERRY, Director of the Division of Sanitary Engineering in the Department of Health of Ontario, was chosen President of the Federation of Sewage Works Association at its recent meeting in Pittsburgh.

DR. A. L. MACNABB, Director of the Division of Laboratories, Department of Health of Ontario, has been appointed to succeed Dr. C. D. McGilvray as Principal of the Ontario Veterinary College at Guelph. He will assume his new duties on July 1st.

DR. J. A. COUILLARD, President of the Canadian Tuberculosis Association, has been made a Governor of the American College of Chest Physicians and will also serve as a member of the Pan American Executive of that association. Dr. Couillard is Medical Superintendent of the Mont Joli Sanatorium.

DR. PAUL CARTIER was recently appointed by the Montreal Anti-Tuberculosis League Incorporated to direct the work of tuberculosis detection in industrial establishments.

DR. A. LAPIERRE, of Outremont, Quebec, has been appointed Director General of the Administrative and Technical Services of the Ministry of Health and Social Welfare, Province of Quebec. Dr. Lapierre, who succeeds Dr. Elphège Lalande, had previously occupied this position from 1936 to 1939.

MR. CHRISTIAN SMITH has been named director of the Division of Health Education in the Department of Public Health of Saskatchewan. Mr. Smith was formerly director of the Social Hygiene Division of the Health League of Canada.

Death of Dr. Gordon B. Moffat

DR. GORDON B. MOFFAT, formerly of Weston, Ontario, died suddenly at Kalamazoo, Michigan, on January 3rd. Dr. Moffat graduated from the University of Toronto in 1923, with the degree of M.B., and later obtained the Diploma in Public Health from the same university. For some years he had practised medicine in the United States and since October, 1943, he had served as Director of the Kalamazoo City-County Health Department. Previously he had been associated with the Children's Fund of Michigan for a number of years, serving as District Health Officer at Grayling, Charlevoix, and Rogers City.

C.P.H.A. News

AT THE thirty-third annual meeting of the Association, held in Toronto on November 6 to 8, the following members were elected Provincial representatives for 1945: Dr.

C. J. W. Beckwith, Sydney; Mrs. C. H. Beer, Charlottetown; Dr. A. E. Berry, Toronto; Dr. Alan Brown, Toronto; Dr. C. P. Brown, Ottawa; Dr. P. Creelman, Charlottetown; Dr. J. S. Cull, Victoria; Dr. J. E. Davey, Hamilton; Dr. C. E. Dolman, Vancouver; Dr. C. R. Donovan, Winnipeg; Dr. W. H. Hatfield, Vancouver; Miss Muriel E. Hunter, Fredericton; Dr. G. P. Jackson, Toronto; Dr. B. C. Keeping, Charlottetown; Mr. T. J. Lafrenière, Montreal; Dr. G. M. Little, Edmonton; Dr. T. A. Lomer, Ottawa; Dr. M. S. Loughheed, Winnipeg; Miss Helen G. McArthur, Edmonton; Miss Margaret E. MacKenzie, Halifax; Dr. J. J. MacRitchie, Halifax; Mr. D. B. Menzies, Edmonton; Miss Edna L. Moore, Toronto; Dr. Stewart Murray, Vancouver; Dr. Paul Parrot, Quebec; Miss Elizabeth Russell, Winnipeg; Mr. J. G. Schaeffer, Regina; Miss Elizabeth Smith, Regina; Dr. A. Somerville, Edmonton; Miss Dorothy E. Tate, Victoria; and Dr. G. R. Walton, Regina.

SEVENTY members attended the thirteenth annual Christmas meeting of the Association's Laboratory Section, which was held in the Royal York Hotel, Toronto, on December 18 and 19. The address by the Chairman, Dr. G. D. W. Cameron, will be published in the February issue of the JOURNAL, together with abstracts of most of the twenty papers which were presented at the three sessions. The following officers were elected for 1945: Chairman, Dr. A. L. MacNabb, Toronto; Vice-Chairman, Dr. C. A. Mitchell, Hull; Secretary, Dr. R. Hare, Toronto; Section Council, Dr. F. T. Cadham, Winnipeg, Dr. G. B. Reed, Kingston, and Dr. R. M. Shaw, Edmonton; Local Committee, Dr. D. T. Fraser, Dr. W. B. McClure, and Dr. F. O. Wishart, Toronto; Nominating Committee, Dr. A. R. Foley, Quebec, Dr. R. Gwatkin, Hull, Dr. W. A. Riddell, Regina, and Dr. W. B. McClure, Toronto.

THE ASSOCIATION'S thirty-fourth annual meeting will, it is tentatively planned, be held in the Royal York Hotel, Toronto, on November 12, 13 and 14.

